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Editorial Notes

THE publication of an historical map of Palestine[1] gives an opportunity of discussing the subject of Period Maps, of which this is the first to be produced outside Great Britain ; it may be said at once that it is an excellent example. The present writer is not qualified to criticize it historically, and proposes therefore to confine his remarks to cartography, of which, as the originator of the Period Maps of the British Ordnance Survey, he has had considerable experience.

The preparation of Period Maps was first adumbrated in general terms in *Man and his Past* (1921), where it was suggested that each country or region should publish maps of its territory as it appeared at successive intervals. For Britain, intervals of about 400 years seem to be the most suitable ; but special periods and aspects may deserve separate maps : *e.g.* in Britain the Viking-Danish period, 800–1066 ; a Domesday and Monastic map. The term ' Period Map ' came spontaneously into use because it applies equally to both prehistoric

[1] PALESTINE OF THE CRUSADES : a map of the country on scale 1:350,000, with historical introduction and gazetteer [by C. N. Johns]. Survey of Palestine (Jaffa), 1938. 250 *mils* (about 5*s*). Compiled and drawn under the direction of F. J. Salmon, Commissioner for Lands and Surveys, Palestine, from information supplied by the Department of Antiquities and Père Abel of the École Biblique et Archéologique Française. British Agents : Stanford, 10 Long Acre, W.C. 1. and Sifton Praed, St. James's Street, S.W. 1.

and historic times ; and it is not proposed to confine these maps to either sphere. The ideal is a series of maps showing the changing aspects of the territory throughout the whole of the time that it has been occupied by man. Thus in Britain it is hoped eventually to publish a Megalithic map, a Beaker map, maps of the Late Bronze and Early Iron Ages, and several Medieval maps. So far there have been published a map of Roman Britain, of Britain in the Dark Ages[2] and of Seventeenth-Century England, all on the scale of 1:1,000,000 (16 miles to the inch) ; and a number of maps of parts of Britain (to which ' Period Maps ' is not properly applicable, though often used for convenience).

Period maps represent the impact of modern cartographical technique upon the study of history and archaeology. Historians, since E. A. Freeman and J. R. Green, have always realized, in theory, the need of geographical treatment, but their practice has lagged behind. Today it is possible cartographically to represent a period—any period—against the background of the physical environment which conditioned it, and to represent it in such an objective way that the interrelated facts (*e.g.* settlements, roads, battlefields, frontiers) are apprehended visually, without any of the distortion to which words are liable.[3] Green fully appreciated the need of such representation ; but both he and the majority of historians since have been content with small-scale black-and-white diagrams which (though still useful) fall short of the ideal now cartographically possible.

The superiority of the modern type of Period Map on a fairly large scale—anything between 1:250,000 and 1:1,000,000—over the small scale diagram may be illustrated by a comparison. In any war the most up-to-date maps and survey methods have always been used, for the army with the best technical resources has a great advantage over the enemy. That is obvious, but is it not equally obvious that, in order to understand them, we should follow the campaigns of, say, the

[2] The South Sheet was published in 1935 ; the North Sheet (Scotland and Northern Ireland) is now in the press, and should be ready soon. A map of Monastic Britain (scale of 10 miles to the inch) is in preparation.

[3] Of course a map may be thus distorted, by intentional omission or selection of facts ; but it is assumed that the map-compiler's intentions are as honest as those of the historian.

English Civil War or of the Crusaders, upon maps which enable us to visualize the lie of the land as fully and plainly as possible ? When, as happens today, we can produce better maps than could the original combatants, it is clearly our duty to do so ; and that is what Mr Salmon has now done.

The Crusader map is much better produced than the map of Roman Palestine which, though archaeologically excellent, was only printed by the Survey Department and was not sponsored by it, as this one is. There is no bewildering array of symbols and names, and the general appearance is good. It is no secret that the map owes its existence to the personal interest of Mr Salmon, who has designed the map as a whole and drawn the ornamental margin and the central panel on the cover. The physical basis is a system of layers, with contours at intervals of 300 metres above and below sea-level. The layer-printing is well done and on the whole effective. Names of the period are written in letters of the period, and the type of letter used is reasonably legible. Modern Arab names are written below the ancient ones, with a valuable distinction drawn between those known to occur in medieval Arab records, and those not so known. Routes, in red, have been traced from the itineraries of pilgrims and travellers of the Crusading Period. Regional names are in red. ' The spelling of medieval place-names is taken from contemporary documents, and is not always consistent '. That is as it should be ; consistency in spelling is a modern invention, and an attempt to impose it upon a period that knew it not would have been wrong. Forest areas are indicated by the usual tree-symbols—deciduous and (in a couple of regions) coniferous. These are presumably restorations of contemporary forests, but there is no reference to them in the text.

In addition to the main map there is an inset of the kingdom of Jerusalem (1:2,000,000) and plans of St. Jean d'Acre and of Jerusalem in the text (1:10,000).

We have devoted considerable space to this map, because we regard it as a land-mark and beacon. It reflects the greatest credit upon the Survey of Palestine and upon Mr Salmon himself and his collaborators. Some hint of the difficulties that have been overcome is given by the statement (in a leaflet enclosed with it) that ' the scale of

1:350,000 was selected because . . . it was the largest which the photographic section of the Department could deal with '. Those in any way familiar with the conditions of map-production overseas can imagine many other difficulties and limitations that were encountered, and can congratulate the Department upon overcoming them so successfully. We understand that it is hoped to publish a map of ' Palestine of the Old Testament ' and we sincerely hope that this project will be realized. If Ordnance Survey experience is any guide, Period Maps should also be a profitable venture.

Finally, a few words about other regions. It should surely be possible for the Survey Departments of other parts of the British Commonwealth and Mandated Territories to produce a series of Period Maps. The most obvious country to follow suit is Ireland ; it has the cartographic convenience of being an island, with immutable sea frontiers, and it has on the whole a well-documented history. Egypt has already produced maps of the Roman period, and all the material for other maps exists. In Irak this work could be organized so well—but never will be—by a private body that is unwilling to risk excavation there under the existing laws. Cyprus has long talked about producing something of the nature of an index-map of antiquities (which is not the same thing as a Period Map), but so far nothing has been done. India is rather a big proposition, but not unmanageable if a suitable scale were adopted, or if it were subdivided into suitable regions.

We make these remarks because we should like to see the lead already given followed elsewhere. Englishmen have always been innovators, but are not so good at following up their own innovations. Perhaps that will be done by some other country. It would be nice, for instance, to see a map of France in the Dark Ages, of Classical Greece, or of Anatolia. Perhaps the Germans will undertake this.

The Hebrides: a Cultural Backwater

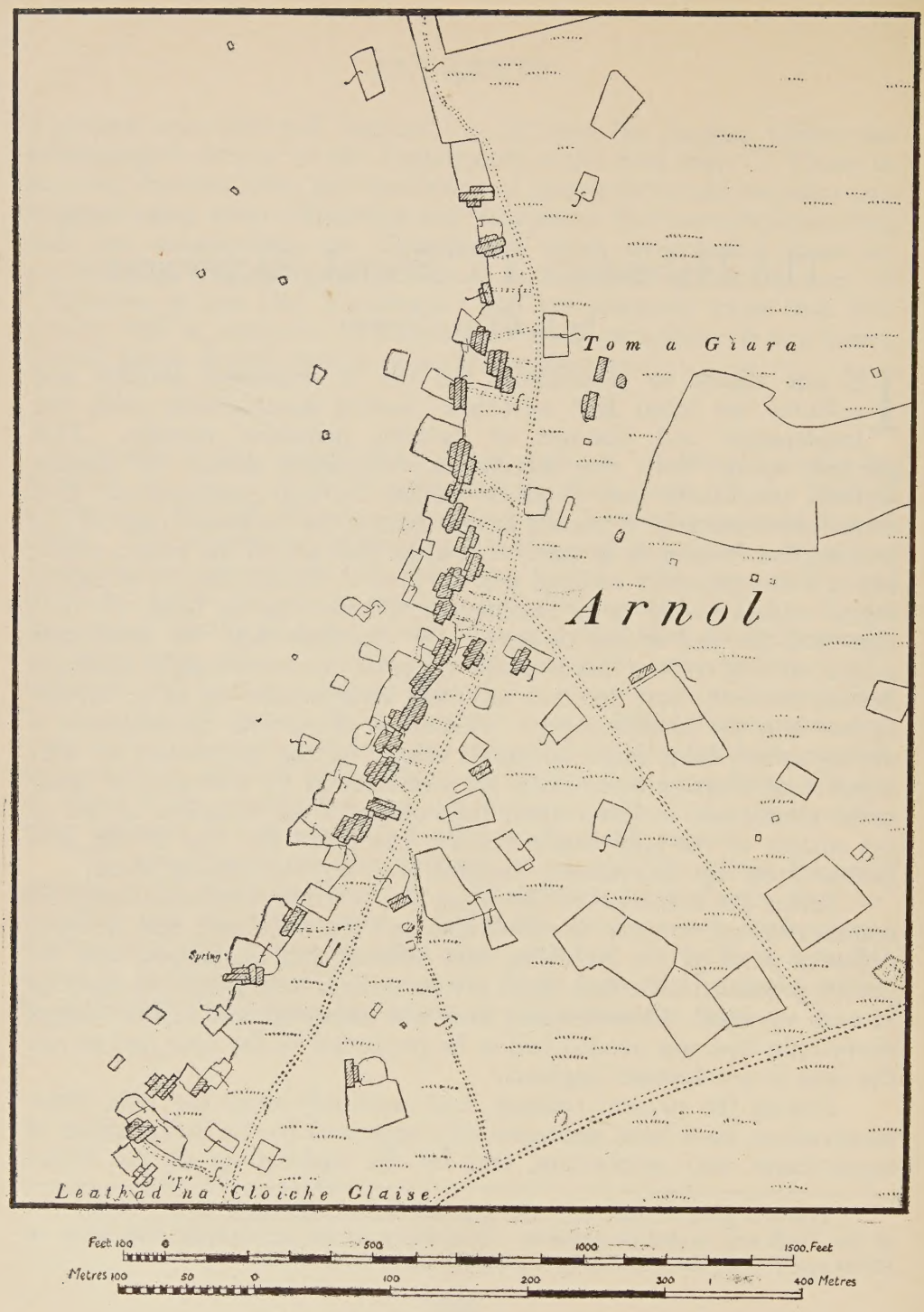
by E. Cecil Curwen

In our efforts to reconstruct the life of vanished peoples and cultures we often find ourselves making comparisons with the implements and customs of modern primitive peoples. This practice seems, with due safeguards, reasonably sound, for similar cultural conditions may produce similar cultural phenomena. Our comparative material is usually sought among the backward races of the tropics, less frequently in parts of Europe that are off the beaten track; but it is not generally realized that we have in Britain itself a populous region which, owing to its remoteness, did not emerge from the Iron Age until the end of last century. By 'the Iron Age' we mean that simple state of culture that is found in peasant communities in southern Britain between, say, 500 B.C. and A.D. 1000, extending in a variable degree into the Middle Ages. This stage of cultural development is distinguished from more advanced stages by the prevalence of self-supporting communities which are necessitated by difficulty of communications, and in this respect the culture of the Hebrides as late as the middle of the nineteenth century was more like that of the pre-Roman Iron Age in southern England than any succeeding phase.

Before the invention of the steam and internal combustion engines communication between the Hebrides and the mainland, and between different parts of the Hebrides, was difficult and dangerous, and the people produced little that could attract traders to undergo the hazards of such voyages. Consequently little was imported, and in the villages everything that was needed had to be produced on the spot just as was the case in pre-Roman England.[1]

During the present century, and especially since the War, communications have been immeasurably improved by the introduction of motor-boats and motor-cars, and by the making up of the island

[1] This is a general statement, and does not necessarily apply to the households of the chiefs and landed proprietors. Even today, of the 30,000 (odd) inhabitants of Lewis and Harris, the majority have probably never seen a train.



ARNOL: A TYPICAL VILLAGE OF 'BLACK HOUSES' IN WEST LEWIS (1897)

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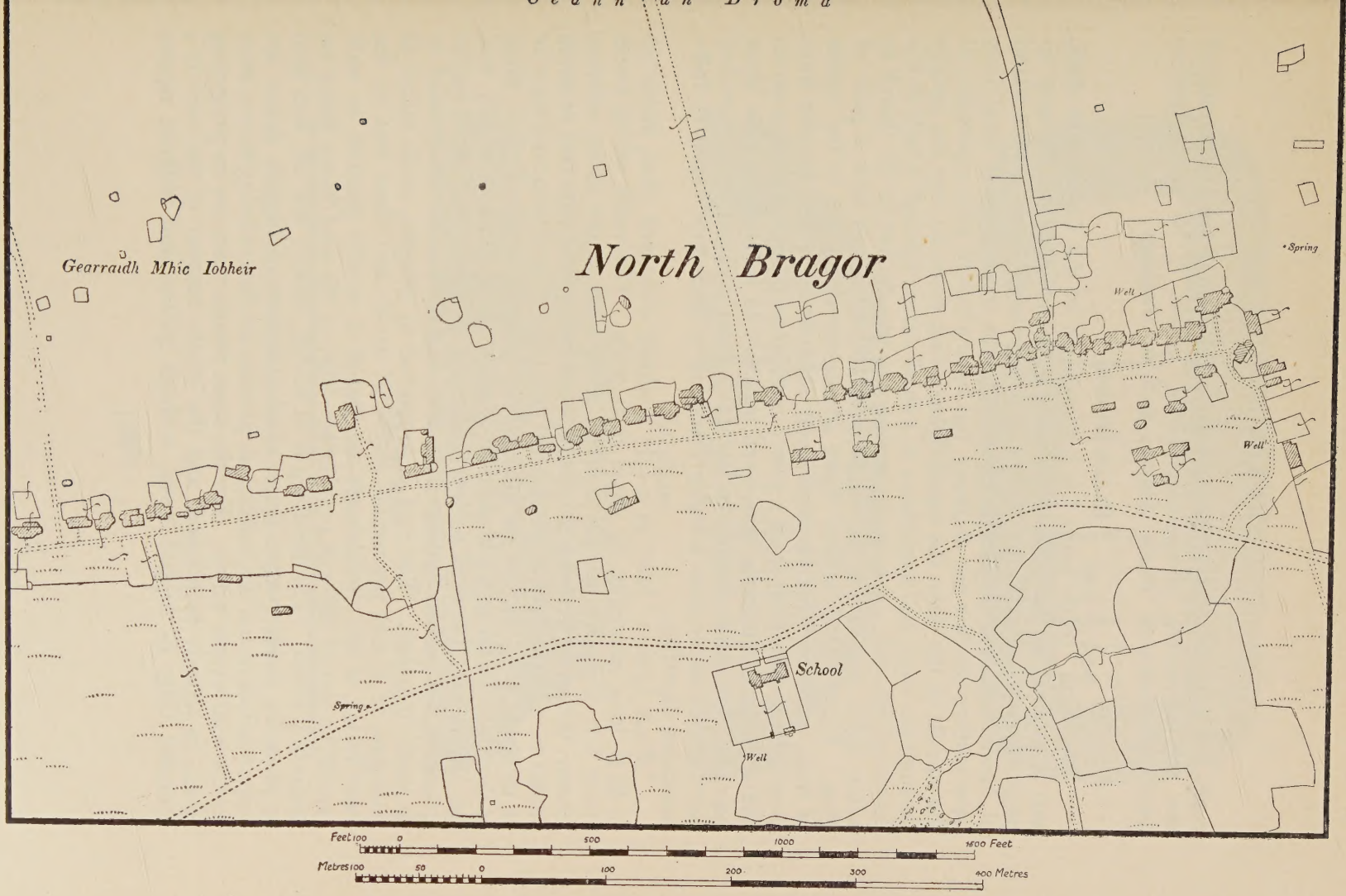

NORTH BRAGOR: A TYPICAL VILLAGE OF 'BLACK HOUSES' IN WEST LEWIS (1897)

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roads. Little, therefore, now remains to be seen of the functioning of the self-supporting village-community, unless it be the primitive dwellings known as ' black houses ', and the shielings.

' Black Houses '

The term ' black house ' is a translation of the Gaelic *tigh dubh*, and is applied to the primitive dwellings which may still be seen in large numbers—though not always in their pristine form—in the island of Lewis, and less frequently elsewhere. In their original form they have neither window nor chimney, but have a hearth with a peat-fire in the middle of the floor, the smoke from which finds its way out mainly through the door, and sometimes to a small extent through a hole in the thatch of the roof. A second opening was usually left in the thatch to admit light, and this is nowadays generally furnished with a pane of glass. Many ' black houses ' have undergone alterations in the course of time, whereby windows have been cut into the walls, hearths have been moved so as to abut on a newly built stone partition wall, or on an end-wall, and chimneys have been added. In a house of this latter type that the writer entered in Barvas (Lewis) a young mother rocked her baby in an ancient wooden cradle of a kind only found in folk-museums elsewhere.

' Black houses ' have as a rule a simple elongated plan, about 30 to 60 ft. long externally, by about 20 ft. wide. The walls, which stand about 6 ft. high, are usually double, being built of dry stone without mortar, the space between the double walls being filled with turf or small stones to render them weather proof (FIG. 1). The whole wall may be as much as 5 ft. thick at the base, often thinning to about $3\frac{1}{2}$ ft. thick at the top. In the older houses the corners are rounded externally, and the stones may be more or less undressed boulders ; in more recent examples the corners are often square, and the stones are dressed to fit neatly together. The roof is supported by couples, made either of branches or of any procurable pieces of wood, and these rest on the *inner* facing of the double wall, so that it is usually possible to walk round the top of the wall outside the edge of the roof, there being no projecting eaves. The covering is of thatch, loosely laid on, and held in place by heather-ropes from which numbers of biggish stones are suspended all round the building to prevent the thatch being blown away by the wild winter winds. For the same reason there are no projecting eaves, as already mentioned, and the whole contour of the roof is a rounded ridge of hipped form, without gables, and without square

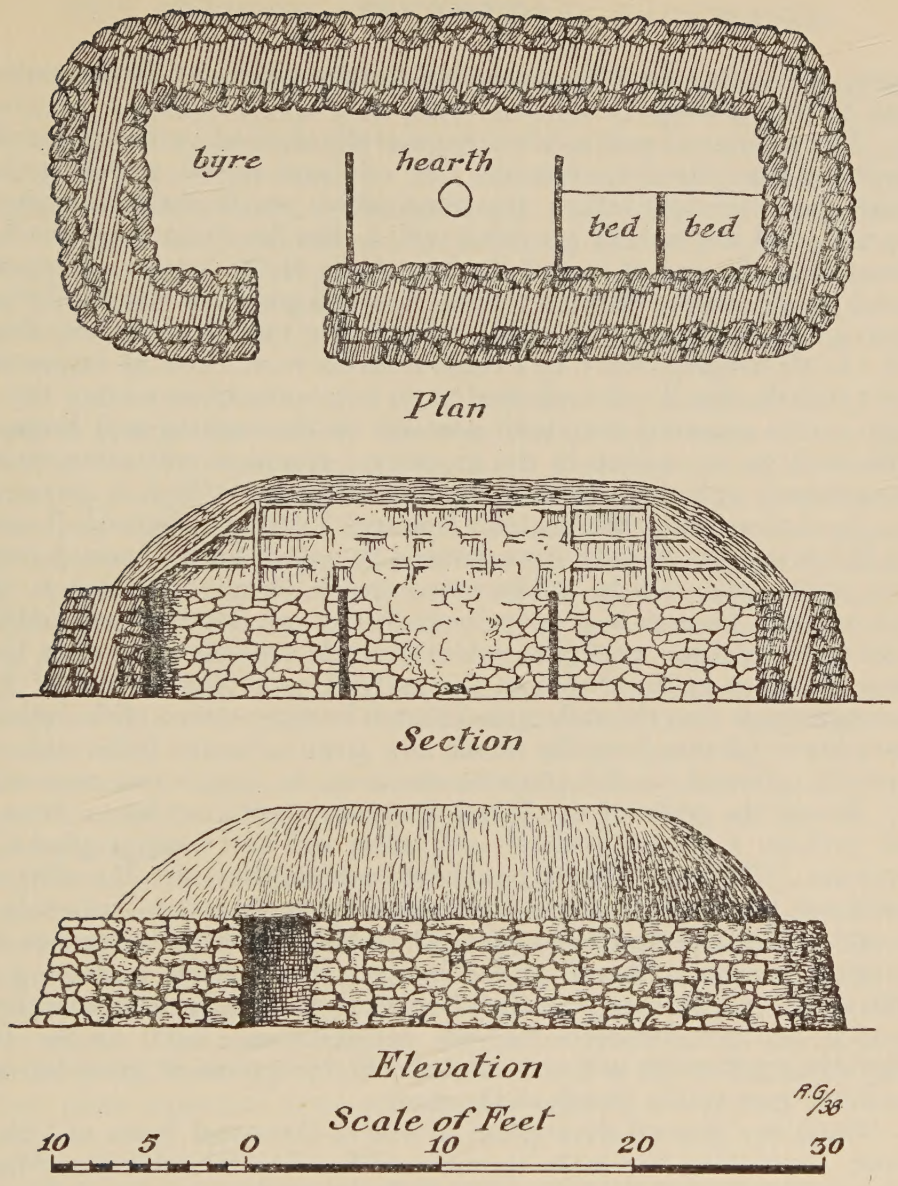

FIG. 1. PLAN, SECTION AND ELEVATION OF TYPICAL 'BLACK HOUSE' *e.g.* IN SKYE

edges. Nowadays heather-ropes tend to be replaced by fishing-nets or even by wire netting.

The interior of such a house is generally divided by rough wooden partitions into three apartments. At one end is the cow-byre into which the outer door leads ; this door, which stands the full height of the wall, and is generally provided with a thin flat stone for a lintel, is placed near the end of one of the long walls of the house. From the cow-byre one passes through a rough wooden partition into the living-room where one sees a peat fire burning in the middle of the clay floor, and a kettle hanging over it by a chain from the roof. It is an interesting point that the fire is never allowed to go out, summer or winter, day or night ; it is smoored over with peat-ash in the evening and keeps in sufficiently to be revived in the morning ; complete extinction would be extremely unlucky. Even in the ' black house ' which is preserved as a local museum by the Scottish National Trust at Callernish (Lewis) the fire is said not to have been allowed to go out for a hundred years. The peat-smoke, which, unlike wood-smoke, is not irritating to the eyes or lungs, finds its way out principally through the cow-byre and the outer door—and to a negligible extent through any hole which may have been left for it in the thatch of the roof. One of the results of this arrangement is that the rafters and thatch become coated with a sticky, sooty fur which was formerly valued as a manure for the fields and was carefully collected for this purpose whenever the thatch was renewed.

Round the walls of the living-room are chests, settles, a dresser, and perhaps a spinning-wheel—all rather old and elegant pieces of furniture. Through a door in the second partition lies the sleeping apartment, one side of which is occupied by two wooden-framed beds in cupboard-like recesses occupying the whole of one wall between the partition and the end-wall of the house. Each bed is perhaps 5 ft. wide and 5 or 6 ft. long, and they lie foot to foot, being separated by a wooden partition between the two bed-recesses. Each of the two inhabited apartments will nowadays be lit by a pane of glass let into the lower part of the thatch of the roof.

Such is a general description of one of the usual types of ' black house ', excluding the more recent modifications to which many have been subjected, and it is based largely on specimens visited by the writer in Skye in 1920 and 1934.[2] The occupants of these remarkably

[2] In the case of one house at Woodend, near Portree, the present occupant could account for its past occupants for 200 years. The house is obviously an old one and less carefully built than most, but has been recently modified internally.

picturesque old houses—proud, reserved Gaels—are unfortunately exceedingly sensitive about what they consider to be evidence of their poverty, and they are intensely resentful of anything resembling curiosity on the part of a ' Sassenach '. It is therefore seldom possible to gain entry to a ' black house ' without much diplomacy and the greatest tact; a personal introduction by another local inhabitant is nearly always necessary. The people are also very camera-shy, so that it was something of a triumph to be able to obtain a photograph of an interior with central fireplace in the village of Arnol in Lewis in 1937 (see PLATE V).

A more complex type of ' black house ' is characteristic of the island of Lewis, particularly the west coast, where some of the best examples may be seen at Arnol (PLATE I); here they are still extremely common, though few can have escaped undergoing some modification since they were described by Capt. Thomas in 1867.[3] The general type of construction is the same as that just described, but the house may consist of two, three, or even four[4] long structures of unequal length, lying parallel to one another so that they share the intervening long walls in common, but each covered with a separate ridge roof (FIG. 2). The rain that falls in the trough between adjacent roofs percolates down through the thick wall upon which they rest, no attempt being made to carry the water off by guttering. After all, what matters damp in a dry-stone wall which has neither plaster nor paper to cover it within, and when the air is kept warm and dry by the ever-burning fire?

When the house consists of three parallel structures in this way, the central one is generally the longest, widest and highest, and forms the main chamber of the house, the other two forming a porch and a barn respectively. The porch accommodated a quern on a fixed table on one side of the entrance,[5] and provided room for stalling a horse on the other side. The main chamber might be from 30 to 50 ft. long internally, and 12 to 14 ft. wide, and consisted in Capt. Thomas's time of two parts separated from one another only by a step and not by a

[3] *Proc. Soc. Ant. Scot.*, 1870, VII, 153–60.

[4] I have only seen one instance of a house consisting of as many as four parallel chambers; this is in the township of Fivepenny Borve, and is illustrated in a recent photo by Aage Roussell in his *Norse Building Customs in the Scottish Islands* (1934), 13, fig. 3 (' Mealahost ').

[5] For the arrangement of the quern see ANTIQUITY, 1937, XI, 144–5, fig. 39 and pl. III; Arthur Mitchell, *The Past in the Present* (1880), 33–8.

partition of any kind. The larger part—about two-thirds of the whole—formed the cow-byre, while the smaller part formed the domestic quarters of the household and had a fire in the middle of the floor, as usual. As the long axis of these houses generally lies at right angles to the contours of the ground there may be a considerable fall in level between the upper and lower ends of the house. The byre is always at the lower end and anyone entering the house from the porch would have to pass through the byre to reach the domestic end, the floor of the latter being raised by a step about a foot above that of the byre. The animals would be tethered round the walls of the byre, and as the floor was cleared only once a year the accumulation of manure might in the course of the year raise it well above the level of the domestic end. And yet the approach to the latter lay of necessity through the byre, because it was better so than that the animals should be taken in and out through the ' living room '. The end-wall of the byre usually has a wide gap in it, about 6 or 7 ft. wide ; this is kept blocked with a wall of turves which can be taken down for the annual cleaning of the byre floor.

Capt. Thomas thus describes the domestic end of such a house as he saw it in 1867 :—

' Externally there is no smoke-hole nor window ; but the purpose of both is served by two holes, about a foot square, in and at the bottom of the thatch . . . the custom arises from the desire to keep in the smoke until it fills and saturates the vault of the roof. . . . If the sun is shining brightly, these cottages appear on entering to be quite dark, until the eyes become accustomed to the dim light within. . . . The fire, which never goes out, is about the middle of the floor ; on the right hand side is a bench of wood, stone or turf, on which the men sit ; on the opposite side the women perform their domestic duties. Tables and chairs are almost unknown ; but the evidently modern luxury of bedsteads and a dresser are quite usual. I am not sure of the date of their introduction ; but they cannot have been long in use, from the former scarcity of wood, at least of planks. Behind the dresser is the calves' location, because it is near the fire ; and the cows are tethered in winter along the wall. . . . A door opposite the entrance door admits to the barn, which is also commonly the sleeping-place of the grown-up young people '.[6]

Though Capt. Thomas says that in his day there was a prejudice against shutting the cows out from a view of the fire, it is doubtful whether this has survived the pressure of Ministry of Health regulations ; consequently it is probable that all such houses have in more recent times been provided with wooden partitions between the byre and the domestic quarters.

[6] *Proc. Soc. Ant. Scot.*, 1870, VII, 155–6.

The *crûb*, or wall-bed, was becoming obsolete in Capt. Thomas's time, though he was acquainted with people who had used them. It consisted of a recess in the thickness of the wall, raised about 2 ft. above

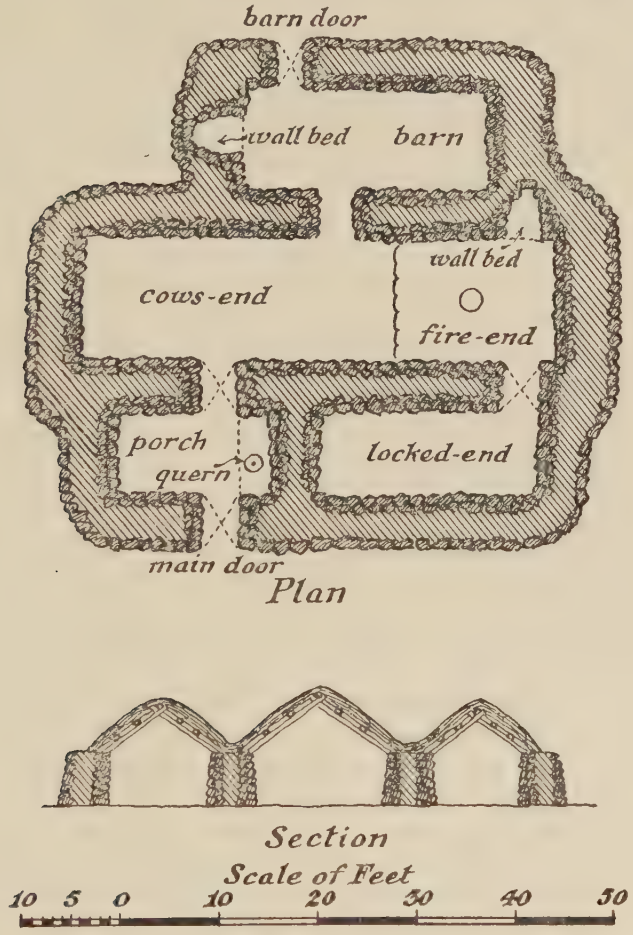

FIG. 2. PLAN AND SECTION OF A TYPICAL 'BLACK HOUSE' IN LEWIS
(*Plan after* Thomas)

floor level. At the mouth it might be $2\frac{1}{2}$ ft. wide and 3 ft. high, and it would extend into the wall to a depth of 5 or 6 ft., becoming narrower and lower as it went; it was roofed with flag-stones. The would-be sleeper introduced himself feet foremost into this recess, sometimes

with the help of a rope hanging from above—no mean achievement, one would think—and lay with his head at the opening. In the oldest houses in Lewis, Capt. Thomas says, there was usually a *crûb* in the wall opposite to the hearth, ' and where there was one on each side of the fire, the house was considered to be well supplied. If there were more in the family than these beds would hold, they lay in a corner upon the floor, railed in by a plank on edge. Occasionally the second *crûb* was in the barn. . . . An old lady of my acquaintance, when a girl, was on a visit, where the servant girl used to carry her to her sleeping-place in the wall (which, in this instance, was at the cows' end of the house), that she might not soil her feet by walking among the cattle '.[7]

' Black houses ' are nowadays confined to the more northerly of the Western Isles, and are not now found on the mainland. Those of Orkney and Shetland, though closely related to those of the Hebrides, show certain differences, such as a stricter rectangularity of plan (avoiding rounded corners), and the possession of gables and single walls.

Recently a Danish architect, Aage Roussell,[8] has demonstrated the Scandinavian affinities of these primitive ' long houses ' of which the typical feature is that the family occupies one end, while the other end forms the byre. This was the characteristic plan of the Scandinavian houses of the Iron Age and Viking period, as evidenced by very many examples in Norway, Sweden and Denmark, some of which have been amply described by Professor Gudmund Hatt in ANTIQUITY.[9] Allowing for the difference of material—wood and clay—some of the houses of the Roman Iron Age in Jutland seem to be an almost exact counterpart to those Hebridean ' black houses ' which consist of a single long building. Other examples are known in large numbers from southwest Norway and from Sweden. The recent discovery of the remains of a Viking house at Jarlshof in Orkney provides another striking parallel to the ' black houses ', including such a feature as the double stone wall with earthen core.[10] The type of house which consists of two or more parallel chambers, each with separate ridge-roofs, is found both in Lewis and in the Orkneys and Shetlands, and certain analogies are available from Iceland.[11]

[7] Ibid. 159.

[8] Aage Roussell, *Norse Building Customs in the Scottish Isles* (London, 1934).

[9] ANTIQUITY, 1937, XI, 162–73.

[10] *Proc. Soc. Ant. Scot.*, 1935, LXIX, 265–88.

[11] *Proc. Soc. Ant. Scot.*, 1873, X, 156.

To judge from the accounts of 18th century travellers, such as Pennant and Boswell in 1772–3, ' black houses ' of some such form as those described above were still the normal dwellings throughout the Western Isles from Rum northwards.[12] Further south in Islay Pennant illustrates a somewhat similar dwelling with central hearth, but having windows and gables.[13]

In the remote island of St. Kilda the old ' black houses ' were almost all replaced by a more modern type of cottage between 1829 and 1843. An entertaining description of the old houses is given by the Rev. Neil Mackenzie, who was minister of St. Kilda at that time.[14] After describing the thatch and the use of the soot on it for manuring the barley, he says : ' The furniture consisted of an iron pot or two ; a chest or two ; a wooden dish called *buta* and another called *cuman* ; a straw vessel like a large flat-bottomed beehive called *loban* ; an iron lamp called *cruisgean ;* a quern, and a few old barrels, some of them hooped by a rope made of a kind of ground willow twisted. The cattle occupied the division next the door, and it was not cleaned out till spring. At the other end lived the family, and there all the ashes, dirty water, and still worse, was spread out over the floor, and covered from time to time with layers of dry peat dust. Before the time for removal for use in spring the mixture was often higher than the side walls, so that a visit to a sick parishioner was quite an adventure. Owing to the thickness of the wall the door of the house was at the end of a low tunnel. Before the door, and extending part of the way into the tunnel, was a hole into which was thrown all the birds not used for food, the refuse of the others, and such like abominations. As the doorway was not more than 5 ft. high, you had to make your way past this in a stooping position, till at the end of the tunnel you reached the door. If it was spring-time, on passing the door you had to climb up among the cattle, which got excited from the presence of a stranger, the barking of dogs, and the shouting of your friends above. Amidst great excitement you got helped along, and hoisted over the ' fallan ' [*i.e.*, the low stone partition between byre and living quarters]. Now you had to creep along on hands and feet, as it was only near the centre of the house that you could even sit upright. In this way you arrived at the edge of the steep slope above the bed opening [*i.e.*, a *crûb*, or recess in the thickness of

[12] Thos. Pennant, *A Tour in Scotland* (3rd edn. 1774), II, 277 ; *Boswell's Journal of a Tour to the Hebrides* (Heinemann, 1936), 137–8.

[13] Pennant, *op. cit.*, II, 229 and pls. XV, XVI.

[14] *Proc. Soc. Ant. Scot.*, 1905, XXXIX, 401–2.

the wall], down which you went head foremost, nothing visible above but your legs, while you spoke and prayed with the sick '.

Martin, in his descriptions of the Western Isles and of St. Kilda in particular (in 1697), does not say much about ' black houses ', because to him, a native of Skye, they were too ordinary to be worth more than a passing mention.[15]

Houses built of turf (*i.e.*, peat) are not common now, except as shielings, but they can be very stable and durable. Mr Crawford has photographed a fine example by Loch Eynort in South Uist, built in 1914 and showing the careful laying of the turves in herringbone fashion[16] (PLATE III, 1). Houses of turf were more commonly met with on the mainland in the 18th century : Boswell describes one consisting of three rooms, lined with wattle, in Glen Moriston, and another consisting of byre, dwelling room and sleeping room near Loch Ness[17] ; others mention oval turf houses—apparently not shielings—in Argyllshire,[18] Lochaber,[19] Sutherlandshire,[20] and even on Deeside, near Ballater.[21] Turf shielings are still common in Lewis, as will be seen below.

The survival of ' black houses ' to the present day in Lewis and elsewhere should not in any way be looked upon as a stigma upon their occupants. The latter are extremely sensitive about them, and envy those of their neighbours who, with the help of a Government loan, have built for themselves modern two-storey cottages. The social reformer rejoices at this change which is gradually but surely altering the face of the islands, and he comforts himself with the thought that in a few years ' black houses ' will be no more. With social reform there will be universal sympathy, but one cannot help regretting the light-hearted way in which these ancient and picturesque dwellings, that so perfectly fit the wild landscape of the islands, are being eliminated in favour of houses that stand gaunt, stark and unsympathetic on the local sky-line. It is as when in England old thatched, timbered

[15] M. Martin, *A Description of the Western Isles of Scotland*, apud Pinkerton's *Voyages and Travels*, 1809, III, 667.

[16] For a knowledge of this, and for much other valuable information, Mr Crawford is indebted to Mrs Margaret Campbell, of Barra, whom he wishes to thank for her generous help.

[17] *Boswell's Journal*, 99–101, 103.

[18] *Proc. Soc. Ant. Scot.*, 1905, XXXIX, 508–9 (anonymous journal of 1791–2).

[19] Pennant, *op. cit.*, I, 209.

[20] Ibid. II, 315.

[21] Ibid. I, 117.

cottages are replaced by red-brick Council-houses of the severest and most blatant pattern; here an effective protest is generally made, but there not one voice seems to be raised in favour of those unique dwellings which within a very few years will have vanished for ever.

It is not that anyone wishes to perpetuate a standard of life in which human beings live herded with cattle, and without light or air. And yet from these despised 'black houses' has issued as fine a race of men as ever came from any kind of house in England—men who have distinguished themselves in public life in Scotland and throughout the Empire. It is only since the comparatively recent introduction of tuberculosis to the islands by returning emigrants that the 'black houses' have become unhealthy. In the 17th and 18th centuries centenarians appear to have been commoner on the islands than they are now, even attaining ages of 140 or more.[22]

Is it too much to hope that, even if 'black houses' cannot be modernized to satisfy the requirements of hygiene, some specimens may be preserved entire with their furniture, before it be too late? One such is preserved at Callernish in Lewis by the Scottish National Trust, and this contains the nucleus of a folk-museum. This house is not, however, furnished as it was when it was occupied, except that the peat-fire has not been allowed to go out, it is said, for a hundred years. The place ought obviously to be fully furnished in the original manner, each exhibit being displayed in its natural setting, and several more such houses might well be so preserved in different parts.

Shielings

Lewis is now the only part of Britain in which the villagers still repair to the moors with their cattle during the summer—between seed-time and harvest—and live an idyllic life in the shielings. This custom is still widely followed in Norway and Switzerland, and it was formerly observed on the mainland of Scotland, and in the north of England—as witness the numerous place-names incorporating the word 'shiel' or 'shield'. We know from Boswell and Pennant that shielings were in use even as far east as Aberdeenshire round about 1770,[23] but of their character nothing is said.

A shieling (Gael. *gearraidh*, pronounced 'garry'; or *airidh*, pronounced 'ah-ry', to rhyme with 'starry') consists of a group of

[22] Cf. Martin, 649; Pennant, II, 214.

[23] *Boswell's Journal*, 107 (Glen Moriston); Pennant, I, 108 (near Glen Tilt).

more or less permanent huts, to which the same population return every summer. It may be situated in an extremely remote part of the moors, many miles from any kind of track, and all the furniture required has to be carried thither. Skene gives a vivid picture of the departure for the summer shieling.

> ' Having finished their tillage, the people go early in June to the hill-grazing with their flocks. This is a busy day in the town-land. . . . The different families bring their herds together and drive them away. The sheep lead, the cattle go next . . . and the horses follow. The men carry burdens of sticks, heather-ropes, spades, and other things needed to repair their summer huts. The women carry bedding, meal, dairy and cooking utensils. Round below their waists is a thick woollen cord or leathern strap, underneath which their skirts are drawn up to enable them to walk easily over the moors. . . . Women knit their stockings, sing their songs, talk and walk as free and erect as if there were no burdens on their backs. . . . When the grazing ground has been reached and the burdens are laid down, the huts are repaired outwardly and inwardly, the fires are rekindled, and food is prepared. . . . Having seen to their cattle . . . the people repair to their removing feast . . . the chief thing being a cheese. . . . Here they remain making butter and cheese till the corn is ripe for shearing, when they and their cattle return home '.[24]

Once more we are indebted to Captain Thomas for the fullest information we possess regarding the shielings of last century in Lewis and Harris.[25] His observations were made in 1857–66, and his second-hand information went back to the beginning of that century. In his time the huts were either timber-roofed, with stone walls (*airidh*) or round ' beehive ' huts, built and roofed entirely with dry stones on the principle of the corbelled arch, and covered externally with turf and grass. These latter were called *both*, plur. *bothan* (pronounced ' bo ', ' bo-un '), a loan-word from the Norse, akin to our ' booth '. Thomas visited over forty specimens of these beehive huts, mainly in the parish of Uig in Lewis, about half of which number he found to be still inhabited as shielings. He says that they were valued by their occupants more than the timber-roofed structures, partly on account of the scarcity of timber, and its liability to be dislodged in winter gales. In most cases their origin went back beyond living memory ; but an example on Cnoc Dubh, Ceann Thulabhig, near Garrynahine (one of the very few still traceable today ; see PLATE III (2) and FIG. 3) was said to have been built by the grandfather of a man still living in 1866, *viz.*, probably about 1776. This one was still occupied in 1866.

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[24] W. F. Skene, *Celtic Scotland* (1880), III, 385–8.

[25] *Proc. Soc. Ant. Scot.*, 1862, III, 127–44 ; 1870, VII, 161–4. See also Dr Arthur Mitchell, *The Past in the Present* (1880), 58–72 ; Skene, *Celtic Scotland* (1880), III, 387–8.

In general these huts had dimensions somewhat as follows : diameter, external, 12–18 ft., internal 6–8 ft., height, external, 9 ft., internal, 6 ft. The chamber was usually round or oval, occasionally rectangular. They had either one or two doors, about 2½ ft. high, and generally some small recesses or aumbreys in the wall for storing things.

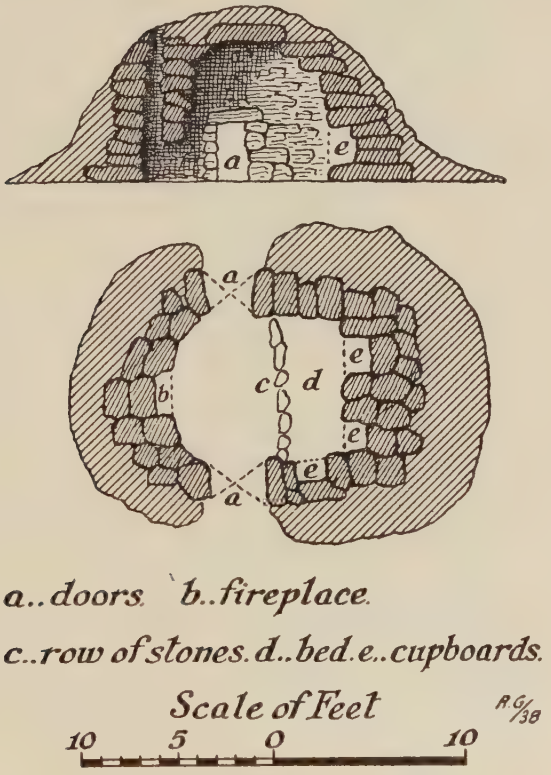


Fig. 3. PLAN AND SECTION OF BEEHIVE HUT, CNOC DUBH, CEANN THULABHIG
(*After* Thomas. Cf. PLATE III, 2)

Some had wall-beds (*crûb*) like the ' black houses ', and all had a smoke-hole at the apex of the dome, except the one at Cnoc Dubh, which is furnished with a recessed fireplace and chimney in the wall (FIG. 3). The huts with only one door, and those with wall-beds, are probably the oldest ; the practice of having two doors seemed to Thomas to be a more recent device by which one or other door could be blocked

with turves, according to the direction of the wind, thus better controlling the draught for the fire and thereby the elimination of smoke. When there are two doors they are opposite one another, but a line joining them divides the interior of the hut into two unequal parts ; the smaller contained the peat fire on the floor, while the larger was filled with hay or rushes to serve as a bed for two or even three persons. Between this bed and the fire was a ' bench ' consisting of a row of stones covered with turf placed right across the hut, and on this the occupants could sit during the day (FIG. 3). A longish stone could be drawn in and out of the wall for the purpose of hanging a pot over the fire. The furniture did not as a rule exceed the following : a blanket, an iron pot, a basin, a spoon, a bag of meal, and some utensils for the milk ; not many years previously these last consisted of hand-made pottery vessels.

Some of these beehive huts stood singly, or in a group, like those at Fidigidh Iochdrach in a remote part of the Uig mountains, which Thomas found still occupied in 1858. Others consisted of two or more interconnecting chambers, one of which served as a dairy. Dr Mitchell's[26] description of his first experience of finding such a structure inhabited (in 1866) is worth quoting :

' We found one of these beehive houses [near Kinloch Resort] actually tenanted, and the family happened to be at home. It consisted of three young women. . . . None of them could speak English . . . they invited us into the *bo'h*, and hospitably treated us to milk. . . . I do not think I ever came upon a scene which more surprised me. . . . By the side of a burn which flowed through a little grassy glen . . . we saw two small round hive-like hillocks, not much higher than a man, joined together, and covered with grass and weeds. Out of the top of one of them a column of smoke slowly rose, and at its base there was a hole about three feet high and two feet wide, which seemed to lead into the interior of the hillock. . . . There was no one, however, actually in the *bo'h*, the three girls, when we came in sight, being seated on a knoll by the burn-side, but it was really in the inside of these two green hillocks that they slept, and cooked their food, and carried on their work. . . . '.

Another group of three conjoined and intercommunicating huts of this type, situated at Bairn-Gail, near Morsgail (Lewis), was inhabited up to a short while before 1885 (FIG. 4).[27] These (to judge from the model preserved in the Pitt Rivers Museum at Farnham, Dorset) were provided with horn-like projections to shelter the entrances from the wind.

Capt. Thomas also described the ruins of several other such huts and hut-complexes on the northern shore of Loch Resort, near the

[26] A. Mitchell, *op. cit.*, 58–9.

[27] Skene, *op. cit.*, III, 388, states that beehive huts were still inhabited in 1880.

FIG. 4. SKETCH OF MODEL OF GROUP OF THREE BEEHIVE SHIELING-HUTS AT BAIRN-GAIL, NEAR MORSGAIL, LEWIS, OCCUPIED TILL SHORTLY BEFORE 1885
(Model in Pitt Rivers Museum, Farnham, Dorset)

headland of Aird Mhor (FIGS. 6–9). These consist of two or four chambers apiece, except one, known as Gearraidh na h'Airde Moire (FIG. 9), which had no less than twelve beehive chambers arranged in four suites, the members of each suite communicating with one another by means of passages about 2½ ft. high. At the time of Thomas's visit two of the chambers were still complete, but collapsed as a result of his explorations. He found nothing but ashes and the shells of edible molluscs in great quantity, but was able to learn that this shieling was occupied as recently as 1823 by four families, the then tenant of the neighbouring farm of Aird Bheag having lived in it as a boy for eight successive summers.

The development of the modern shieling hut (*airidh*) seems to be traceable to the chimneyed *both* already referred to at Cnoc Dubh near Garrynahine (FIG. 3 and PLATE III, 2). The interior of this beehive hut is more or less rectangular, and measures 8 ft. by 7 ft. It has two doors facing one another, each about 2½ ft. high, on either side of a recessed fireplace, with chimney. The other half of the hut was shut off by a low bench of stones and turf which faced the fire ; this bench has now gone.

The next stage of development seems to be represented by an oval stone hut called Airidh a' Chnoic Ghuirm (no imitated pronunciation could do justice to this name), near the road between Garrynahine and the head of Little Loch Roag. The rectangular interior chamber is here expanded to about 12 ft. long, with the result that a beehive stone roof is no longer possible. The fireplace is at one end, the two low doors, 3½ to 4 ft. high, face each other on either side of it, and the bench faces the fire as before. The hut is oval externally, with walls sloping inwards, to be crowned by a low wooden roof covered with turves. This hut had not long been abandoned when the writer visited it in 1937, because the somewhat flimsy roof was still almost intact, and flakes of newspaper were still adhering to its under-surface.

The modern shieling hut seems to be a further development from this last, and is best seen in those shielings which lie not far from the roads which traverse the island. These huts are built of large blocks of peat owing to the scarcity of loose stones. They are rectangular in plan, having internal dimensions perhaps 15 or 20 ft. long by about 9 ft. wide. The long walls are about 4 ft. high and 2½ ft. thick ; the end walls form gables, 7 or 8 ft. high, one of which is constructed of stone and contains a fireplace and some kind of chimney. Again we have two doors, facing one another, in the long walls near the chimney

end, and one of them is always blocked with turf, according to the direction of the wind, both being so blocked at night. The modern way of dealing with the roofing problem, which has always been a dominant factor in the past, is practical if unromantic. The proximity of these shielings to the road makes it possible for a quantity of miscellaneous furniture, including the roof, to be brought out to the shieling by motor-lorry, and taken away again at the end of the season. Such a

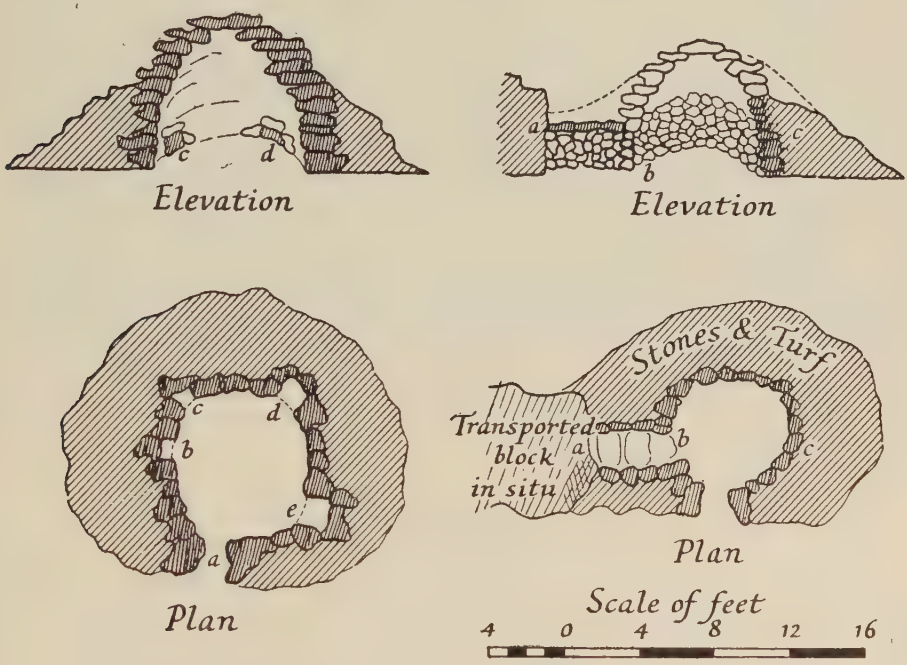


FIG. 5. PLANS AND SECTIONS OF TWO BEEHIVE HUTS NEAR L. MEAVAIG, HARRIS
(*After* Thomas)

roof is constructed of planks, boards and bits of corrugated iron, the whole being covered with a tarpaulin, and lined inside with flowery wall-paper, or even newspaper. The papering may also extend to cover the inner faces of the turf walls. The interior is made cosy with iron bedsteads, feather-beds, cupboards, dressers, chairs, and hangings of all kinds, and even in these degenerate days no visitor is allowed to go away without at least a large glass of creamy milk.

The turf walls are so solid that they neither yield nor quiver when

pushed, and the hut, when unroofed, keeps in good repair throughout the long and stormy winter.

Beehive huts have for some time been disused as shielings, but, on the authority of Skene,[28] they were still inhabited as lately as 1880. They constitute a remarkable survival of a form of dry stone construction—corbelled vaulting—that was introduced to western Europe by the megalith-builders, and has survived throughout prehistoric times in those western regions which were most affected by them. Thus we find them in Ireland in connexion with early monastic foundations, in Orkney in such prehistoric villages as Skara Brae and Jarlshof, in the brochs, souterraines and ' earth-houses ' of the north and west coasts, and in such Iron Age sites in Cornwall as Chysauster and Bosporthennis. Recent examples of this type of construction have been noted in the Hebrides, particularly in Lewis, Harris and the St. Kilda group[29]; in Anglesey and Holyhead, in Cornwall at Fernacre Farm on Bodmin Moor, and in various parts of France—notably near Clermont in Puy-de-Dôme, and in Vaucluse and Basses-Alpes.[30]

Taking the combined picture of the ' black houses ' and the beehive shielings, we can readily agree with Prof. Gordon Childe's view that the 19th century culture of the Hebrides was but a survival of that of the prehistoric village of Skara Brae in the Orkneys,[31] modified by the blending of Norse influences.

Other Primitive Survivals

We have so far been considering only the architectural aspects of this cultural backwater in the far northwest of Britain. But there are many other features of daily life which help to complete the picture, and these must receive brief mention.

(1) Hand-made Pottery. The first and most significant is the survival of hand-made pottery in Lewis down to about the end of last century. Before the dawn of the ' Enamel Age ' comparatively little Staffordshire earthenware and crockery found its way as far as the wild

[28] Skene, *op. cit.*, III, 388.

[29] Martin (late 17th cent.) says that he saw over 500 small huts of this type in St. Kilda, and about 40 in the neighbouring Borera, used for drying fish and preserving birds'-eggs (*Voyage to St. Kilda, apud* Pinkerton's *Voyages and Travels*, III, 708, 721).

[30] Pierre Fournier, ' Les ouvrages de pierre sèche des cultivateurs d'Auvergne ', *L'Auvergne littéraire*, 1933, no. 68; also *Bull. de la Soc. préhist. franç.*, 1921, XVIII, 338–57.

[31] V. Gordon Childe, *Skara Brae* (1931), 182–4.

PLATE I

Above: THE VILLAGE OF ARNOL IN LEWIS
Several of these 'black houses' must have been built since the map of 1897 (p. 262) was published

Below: OLD AND NEW HOUSES IN ARNOL, LEWIS
ph. E. Cecil Curwen, 1937

PLATE II

Above: DUN CARLOWAY, LEWIS: BROCH WITH INHABITED 'BLACK HOUSE' IN FOREGROUND

Below: 'BLACK HOUSE' AT BRAGOR, LEWIS

ph. O. G. S. Crawford, 1936

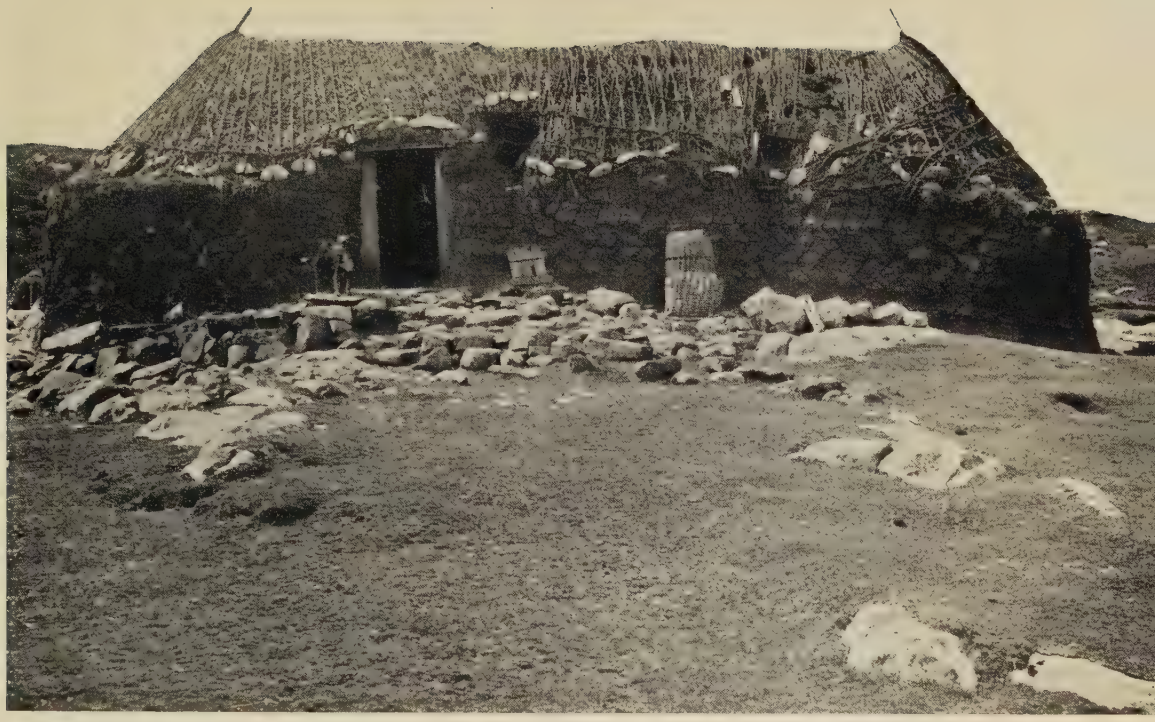


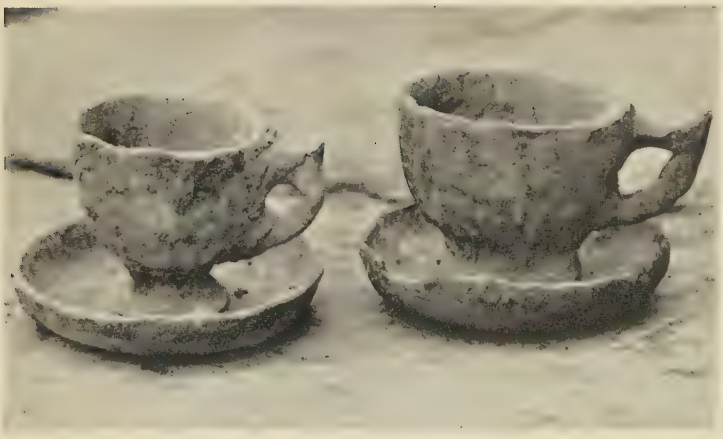
PLATE III

Above: 'BLACK HOUSE' BUILT OF PEAT, L. EYNORT, S. UIST. *ph.* O. G. S. Crawford, 1936

Below: BEEHIVE SHIELING, CNOC DUBH, LEWIS, (cf. Fig. 3), INHABITED IN 1866. *ph.* E. Cecil Curwen, 1937

PLATE IV

1



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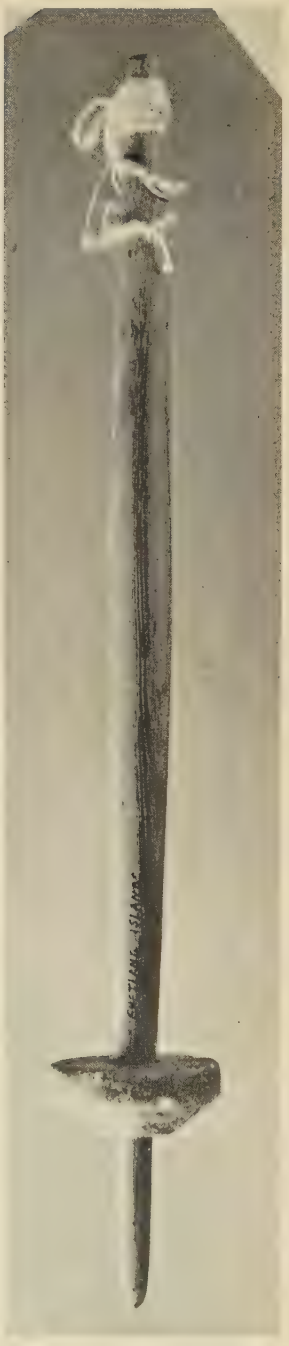

3

1. HAND-MADE 'CRAGGAN', LEWIS, PROBABLY MID-NINETEENTH CENTURY
Note vertical stroked decoration. (Height about 9 inches)

2. HAND-MADE LEWIS POTTERY SHOWING 'STAFFORDSHIRE INFLUENCE'

3. MODERN SPINDLE AND WHORL FROM SHETLAND (length 10 inches)

ph. E. Cecil Curwen

west coast of Lewis, with the result that the people there continued to depend very largely on making their own pots by hand on the domestic hearth in the true ' prehistoric ' tradition, and without the use of a potter's wheel. These vessels were last made at Barvas in Lewis, and the writer met a middle-aged woman at Uig (Skye) in 1920, who in her younger days used to make these ' craggans ', as they are called, in Barvas (PLATE IV, 1). In 1697 Martin remarked on the fine red clay in Lewis, and on the pottery made from it by local women for boiling meat or preserving ale ; he also says that in the island of Tiree ale was

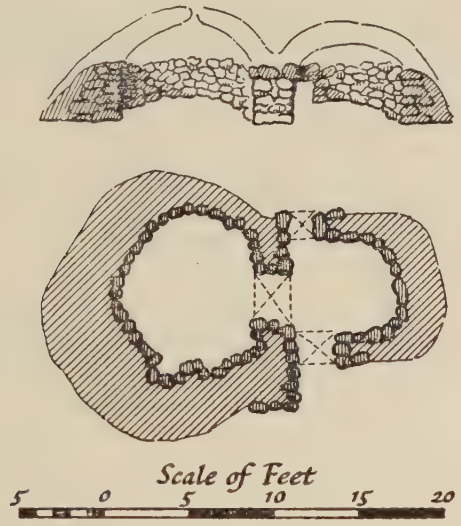

FIG. 6. PLAN AND SECTION OF BEEHIVE HUT NEAR AIRD MHOR, LEWIS
(*After* Thomas)

preserved in large earthen vessels, and its quality improved by plunging into it red-hot stones.[32] But the fullest description we have is that of Dr Arthur Mitchell, who in 1863 found a stone-breaker sitting at the roadside not far from Barvas, and eating his dinner out of a little hand-made pot closely resembling a Saxon cinerary urn.[33] He was able to study the manufacture of these vessels, and has left us the following description of this piece of ' woman's work ' :

[32] Martin, *loc. cit.* 575, 660.

[33] Mitchell, *op. cit.* 25–32, 45–7, 236–7.

' The clay she used underwent no careful or special preparation. She chose the best she could get, and picked out of it the larger stones, leaving the sand and the finer gravel which it contained. With her hands alone she gave to the clay its desired shape. She had no aid from anything of the nature of a potter's wheel. In making the smaller craggans, with narrow necks, she used a stick with a curve on it to give form to the inside. All that her fingers could reach was done with them. Having shaped the craggan, she let it stand for a day to dry, then took it to the fire in the centre of the floor of her hut, filled it with burning peats, and built burning peats all round it. When sufficiently baked, she withdrew it from the fire, emptied the ashes out, and then poured slowly into it and over it about a pint of milk, in order to make it less porous '.

Dr Mitchell adds that in Lewis these vessels were usually unornamented, but that such ornamentation as did occasionally occur was composed of straight lines made with a pointed stick, cord, or thumb-nail. He also quotes a similar description of the making of craggans in Tiree at the same period, and says that as late as the early 19th century this hand-made pottery was common all over the Hebrides and was not unknown in the villages on the west side of the mainland.

A quaint feature of the Barvas pottery is that it latterly began to ' show Staffordshire influence '—if one may adapt a phrase from the prehistorians. This consisted in the production of crude imitations of tea-pots, tea-cups, sugar-basins, etc., in the local unglazed fabric, and it was a feature which heralded the complete extinction of this remarkable survival (PLATE IV, 2). With a branch of Woolworth's established in Stornoway it is not altogether surprising that in 1937 the writer failed to trace a single specimen of Barvas ware in the island—apart from what was already in the Callernish Museum.

(2) POT-BOILERS. Dr Mitchell even saw water boiled in pots by dropping in a heated stone, one or two stones being kept constantly in the fire for this purpose. The stones, which weighed from two to five pounds, soon cracked and fell to pieces, and frequently needed to be replaced.[34]

(3) SPINDLE AND WHORL. Spindle-whorls—small perforated balls or discs of clay or stone—are found in nearly every excavation of a prehistoric dwelling-site, but their use in spinning did not finally die out till about the year 1900 in the more remote parts of Scotland. The whorl fitted on to the lower part of the tapering wooden spindle in order to give it momentum in spinning, and this formed the most primitive

[34] Mitchell, *op. cit.* 121–2. (The sand-dunes of Glenluce are thickly strewn with cracked and broken pebbles, which can only have got there by human agency. The adjacent ' floors ' contain fragments of beaker pottery, thus suggesting that the practice here described endured for perhaps three millennia.—O.G.S.C.).

device for the purpose (PLATE IV, 3). It is widely distributed throughout the world, and has been used from the earliest times down to the present. Pennant records that in 1769 he found that about £1600 worth of yarn was annually sold out of Breadalbane, most of it being spun ' with rocks ', *i.e.*, with distaff and spindle, and he adds : ' Their Lord gives among them annually a great number of spinning-wheels, which will soon cause the disuse of the rock '. One great advantage of

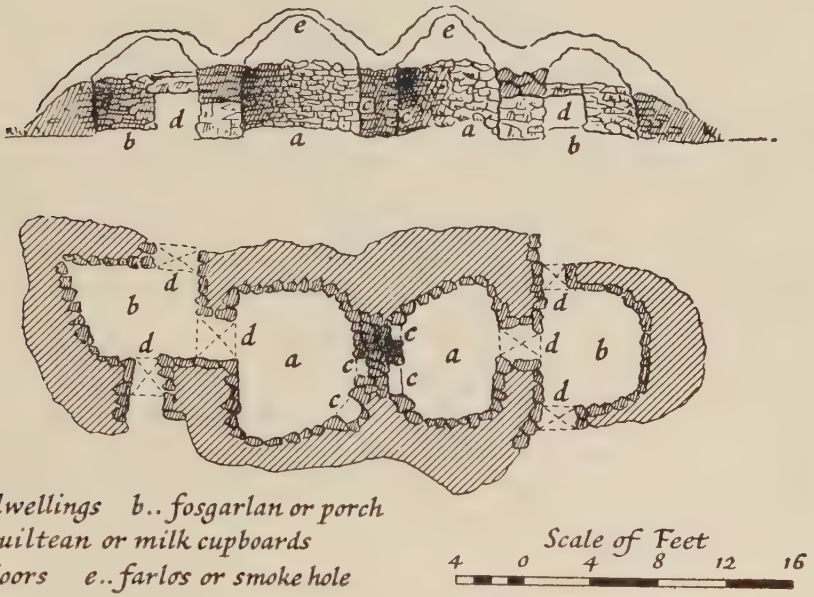

FIG. 7. PLAN AND SECTION OF GROUP OF BEEHIVE HUTS NEAR AIRD MHOR, LEWIS
(*After* Thomas)

' the rock ' was that it could be used by the women while they tended their cattle on the hills.[35] By about 1864–6 Dr Mitchell records that he had observed the spindle and whorl in use in many of the more remote parts of Scotland besides the Hebrides, Orkney and Shetland—namely in the counties of Ross, Sutherland, and Inverness, and the district of Galloway,[36] and in 1880 it was still in common use among the

[35] Pennant, *op. cit.* I, 92–3.
[36] Mitchell, *op. cit.* 1–9.

herring fishers of the west coast of Scotland.[37] Today it is the spinning-wheel which is used, but even this is suffering from the effects of machine production and distribution.

The whorl itself was sometimes replaced by a potato, or by an expanded end on the wooden spindle. Consequently the absence of a whorl of clay or stone does not necessarily imply that no spindle was used.

(4) QUERNS AND WATER-MILLS. Querns, or hand-mills, remained in common use in the Hebrides down to quite recent times, and did not disappear from Lewis till about the time of the War. The writer has recently met more than one Lewis woman of about fifty who used to labour at the quern in her younger days, and a photograph of a quern in full working order, taken in a cottage in Foula (Shetland) in 1902, appeared in a recent number of ANTIQUITY.[38]

Besides querns, small water-mills are found in some of the islands, notably on the west coast of Lewis. One village may possess four or five such mills, placed at short intervals along the banks of the local stream. These mills are of distinctive Norwegian type, and their wooden counterparts are very numerous in Norway today. They are found in those islands which once belonged to Norway or Denmark, *viz.*, the Shetlands, Orkneys and Hebrides. Their distinguishing characteristic is a small water-wheel with a vertical shaft and horizontal blades ; the shaft passes up through the floor and through the lower mill-stone, and acts directly on the upper mill-stone, without any gearing. There is no mill-pond, but the water is carried off from the river by means of an aqueduct and delivered through a chute on to the blades of the wheel.

The Lewis water-mills differ architecturally from those of Shetland,[39] in that they are constructed like the ' black houses ' ; they are small oval buildings built across the aqueduct, with sloping walls of dry stones, and a low, rounded thatched or turfed roof. The last of such mills to work in Lewis is at Shawbost on the west coast, and it is the only one that still retains most of its roof and its wooden parts in easily restorable condition (1937). It would be a shame if such a unique building were allowed to decay unheeded ; can no one be found to restore and preserve this sole surviving specimen before it be too late ?

[37] *Proc. Soc. Ant. Scot.*, 1880, XV, 148–51.

[38] ANTIQUITY, 1937, XI, pl. III, f. p. 136, and fig. 39. For a general account of Scottish querns in the late 19th century see Mitchell, *op. cit.* 33–8.

[39] For an account of similar mills in Shetland see Mitchell, *op. cit.* 39–43.

(5) Agriculture. The run-rig system of agriculture—a form of open-field cultivation—was practised throughout the islands, as in most other parts, until a comparatively recent period. The chief crops are oats, barley and potatoes. Though the plough was known in the Hebrides in the 17th century—for Martin describes its use in North Uist[40]—it was little used on account of the nature of the ground, which

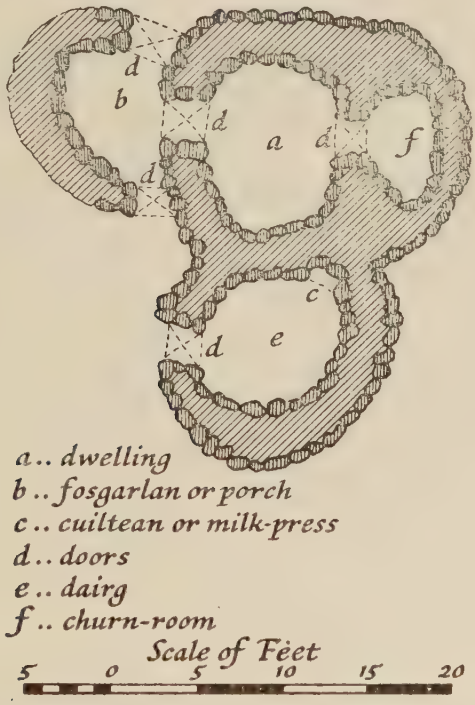

Fig. 8. PLAN OF BEEHIVE HUT GROUP NEAR AIRD MHOR, LEWIS
(*After* Thomas)

is hilly, rocky and boggy. The cultivations took the form of mounded-up ridges, from 5 to 10 ft. wide, and from 20 ft. to 100 yds. or more in length, the longer ridges curving and forking irregularly. The purpose of the ridging was partly to promote drainage, and partly to facilitate manuring with sea-weed, for the soil dug from the ditches was piled up on top of the sea-weed to form the ridges. For this purpose the

[40] Martin, *loc. cit.* 592.

caschrom, or foot-plough, an improved form of digging-stick, was in general use throughout the western Highlands and Islands at the end of the 18th century,[41] and is still occasionally seen in Skye.[42] Of late years it has been superseded by the gardening fork, but it is still a curious sight to see in Lewis, for instance, little patches of oats, perhaps no more than 10 or 15 ft. in length and breadth. These ridges are by some curious perversity called ' lazy-beds ' (Gaelic *feannag*).

Harrows were drawn by hand, and were like large wooden rakes, with one or two rows of teeth and a third row of pieces of heather to smooth out the soil.[43] This implement recalls the large wooden rakes found in the Danish peat-bogs, and suggests yet another link with Scandinavia.[44]

Reaping is still done with a sickle in Lewis, but in some parts the crop was simply pulled up by the roots. It was then dried in ' kilns ', which in their form recall the corn-drying furnaces found in some Romano-British settlements in southern Britain.[45] After drying it might be ' graddan'd ' by rapidly burning off the husks and beating the ears with a stick so that the grains fell out in a roasted but not a charred condition—a kind of combined threshing and ' parching ' operation.[46] In Shetland corn was roasted by rolling hot stones among it as late as Mitchell's time.[47] It was then ready for the quern.[48]

(6) MISCELLANEOUS. There seems no end to the survivals of primitive customs and beliefs in the Highlands and Islands, about which much can be learnt from such books, among others, as those cited in this paper. As illustrating the retarded permeability of this part of Sir Cyril Fox's ' Highland Zone ' to influences from the ' Lowland Zone ', we may mention a few general tendencies. In the more remote islands the Gaelic language still holds its own against English, which is regarded very much as a foreign tongue, in spite of its compulsory study in schools ; in the villages children of pre-school age and

[41] *Stat. Acc. Scotland*, 1793, VI, 288–9 ; Pennant, II, 288 ; Boswell, 282.

[42] ANTIQUITY, 1927, I, pl. I, f. p. 261 ; 1932, VI, 404–5.

[43] Martin, *loc. cit.* 575, 705 ; Pennant, II, 288.

[44] ANTIQUITY, 1938, XII, 147.

[45] Aage Roussell, *op. cit.* 48, 60–2 ; *Antiq. Journ.* 1933, XIII, 121–5. See also note at end of this article.

[46] Described by Martin, *loc. cit.* 639 ; Pennant, II, 280–1.

[47] Mitchell, *op. cit.* 46.

[48] For the effects of drying and roasting before grinding see ANTIQUITY, 1938, XII, 151–2.

the older folk, especially the women have no English at all. Then there was the late survival of the tribal system of government down to the

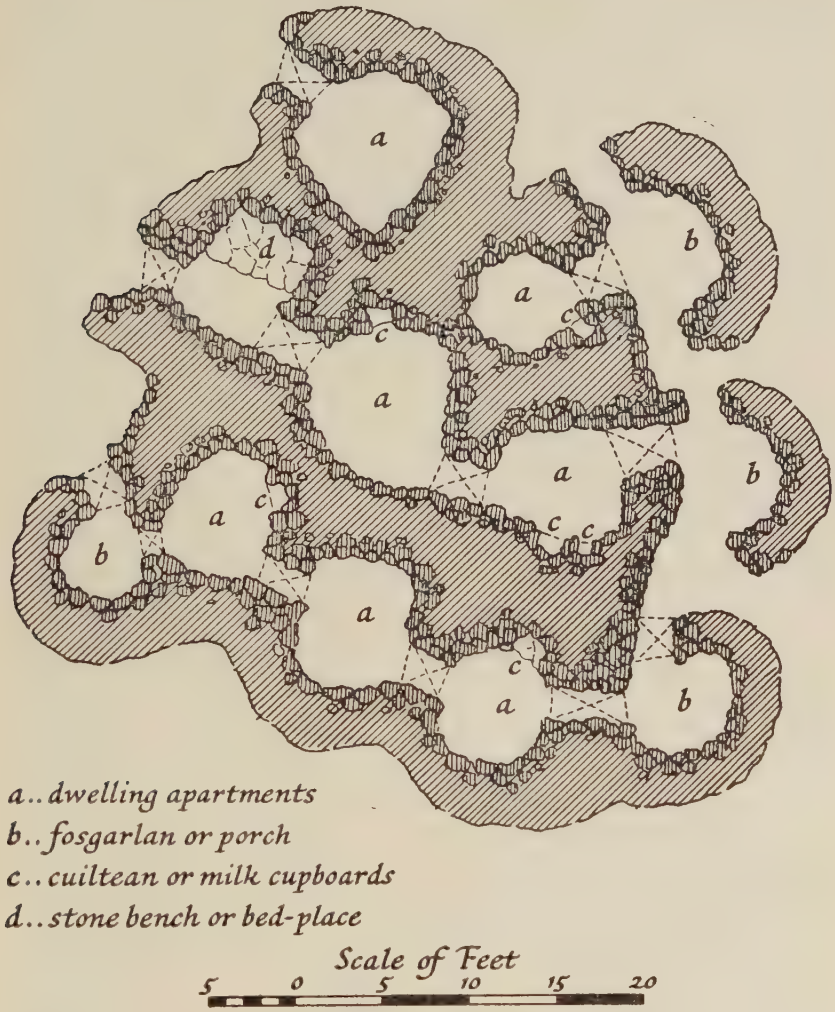

FIG. 9. PLAN OF COMPLEX GROUP OF BEEHIVE HUTS, BOTHAN GEARRAIDH NA H'AIRDE MOIRE
(*After* Thomas)

break-up of the Clans in 1746, together with the persistence of a distinctive form of dress and primitive weapons; the broadsword and target were normal at Culloden in 1746, and as late as 1665 an army of

Camerons and Macgregors included 300 archers in their preparations to resist an attack by the Macintoshes and Macphersons.[49] Martin also says that in 1697 the people of Lewis were dexterous at archery.[50] Furthermore, in addition to a wealth of highly significant superstitions and folk-lore there have not been lacking occasional instances of frankly pagan practices such as sacrifices and libations to Celtic deities as late as the 17th century—practises which the Church had some difficulty in stamping out. One may instance the annual libation of ale to a sea-god Shony at Eoropie in Lewis, with a view to gaining more sea-weed for manuring the fields—a curious fertility rite which was not discontinued till 1665[51] ; also the sacrifice of a bull annually to ' Mourie his devilans ' in an island in Loch Maree as late as 1678[52] ; and, finally, the placing of a female fertility figure on the wall of the 16th century tower of Rodil Church (Harris) in circumstances which indicate beyond all reasonable doubt that the figure is contemporary with its setting.[53]

Among individual points of interest one may instance the use of short oval coracles on the river Spey in 1769, covered with hide, and only 4 ft. long by 3 ft. wide, managed by a one-handed paddle[54] ; and a curious case of trephining of the living human skull, mentioned by Martin,[55] who states that an illiterate empiric, Neil Beaton, established a great reputation for himself as a physician in Skye in the 17th century, and that to cure a severe headache ' he had the boldness to cut a piece out of a woman's skull broader than half a crown, and by this restored her to perfect health '.

The observations and information set forth in this paper illustrate the extraordinary culture-lag which has existed, even in so small a region as Britain, between the Lowland Zone and the more remote parts of the Highland Zone, due partly to the difficulty of communications, and partly to an inherent conservatism. If we had visited Lewis even fifty years ago, we should have been able to study the life and manners of a Celtic-speaking race emerging from roughly the same state

[49] Pennant, I, 191, 362.

[50] Martin, *loc. cit.* 579.

[51] Ibid. 583–4.

[52] Mitchell, *op. cit.* 271–4. This book contains a great deal of further information on kindred topics.

[53] *Anc. Mon. Comm. Inventory, Outer Hebrides,* Rodil Church, Harris.

[54] Pennant, I, 270.

[55] Martin, *loc. cit.* 637.

PLATE V

INTERIOR OF 'BLACK HOUSE', ARNOL, SHOWING CENTRAL FIREPLACE (*see* pp. 266–7)
ph. E. Cecil Curwen, 1937

of culture as the Celtic people of the pre-Roman Iron Age in Wessex. Today this culture-lag is being eliminated by the uniformity which results from air-travel, radio and the Ministries of Health and Agriculture—unifying forces which were unknown of old.

The writer wishes to express his indebtedness to Mr Crawford for placing at his disposal the data he had collected on this subject, and also the photographs he had taken in the Outer Hebrides.

Note by O.G.S.C.

The use of kilns for corn-drying goes back, in the west, at least to the 6th century. The kiln was called in Latin *canaba* ; there was one at Iona (Reeves, *Adamnan*, 1857, 88). Its use is described in the Life of St. Cainnech as being ' ad spicas siccandas et triturandas ' ; and it is stated there that the members of his *familia*, not having a *canaba*, were obliged to thresh their corn ' super nudum pavimentum in campo '. In the Life of St. Ciaran is mentioned a ' rota de virgis contexta plena spicis igni supposita, ut siccarentur ad triturandum secundum morem occidentalium, id est, Britaniae et Hyberniae '. Both these saints were Irish contemporaries of St. Columba ; their lives are preserved in forms which suggest little alteration from the original prototype, which in the case of St. Ciaran was probably composed not later than the 9th century (J. F. Kenney, *Sources*, I, 1929, 379, 394). If Dr Curwen's suggestion is correct[56]—that the Wessex hypocausts were corn-drying kilns—then these modern Hebridean kilns can be linked, through the Dark Ages, with the prehistoric Iron Age culture of southern Britain ; and his main thesis receives striking confirmation.

[56] The suggestion was Prof. Gowland's ; see *Archaeologia*, LXXI, 151–8. Corn-drying kilns seem to have been a product of Roman culture in western Europe ; they are mentioned by Ovid in two passages : *Fasti*, ii, 519–26 ; vi, 313–4. As far as I know they do not occur in Britain before the latter part of the Roman period, though it is likely that previous to their introduction corn was dried on the domestic hearth as in Denmark (see ANTIQUITY, 1938, XII, 151–2). Boswell saw corn dried in the living-room in Raasay (op. cit., 138).—E.C.C.

The Thracian Rider and St. George*

by Gawril Kazarow

THE Thracians were a deeply religious people ;[1] this is attested not merely by ancient writers but also by the many votive monuments found in the former Thracian provinces, dating chiefly from the second to the fourth centuries. Rostovtzeff was justified in remarking some years ago that ' in the Roman period, Thrace experienced a religious renaissance ; in cities and villages there sprang up hundreds of shrines of Greek type, which were filled with votive offerings after the Greek pattern ; yet the Thracians worshipped their divinities in native fashion, and kept their festivals with mystic-orgiastic ritual '.[2]

Among the Thracian votive inscriptions and reliefs known to us, those representing the so-called Rider Hero hold chief place ; 1200 reliefs dedicated to him have been found on over 300 sites in Bulgaria, and are preserved in the national museum at Sofia and in provincial museums. It can be confidently asserted that there was no village in Thrace without its simple shrine dedicated to this divinity. The finds were often made near springs, on high ground ; a few may also have come from tombs, although the evidence for this is not satisfactorily supported.

The majority of these reliefs and bas-relief statuettes are of local marble or limestone, and are quite small. They are rectangular or pyramidal in shape, with arched end ; less often they are pointed in gable fashion. This type of stele is common in the religious art of eastern Europe, as Saxl[3] has lately established. The reverse side of the plaques is only roughly cut, and the same is the case with the statuettes ; obviously, like the ikons in Greek Orthodox churches, they were set on shelves, propped or hung against the walls of the shrine, as may be

* Translated by Professor R. G. Austin.

[1] C. Patsch, *Sitzungsb. Wien. Akad., Phil.-Hist. Kl.* 217, 1 Abh. 82.

[2] *Journ. des Ministeriums für Volksaufklärung*, 1911, pt. iv, 42. Cf. W. Weber, *Rom, Herrschertum und Reich*, 84.

[3] *Mithras*, 28, 34 ff.

seen from a relief in the museum at Plovdiv with holes pierced in its upper part. In the shrine at Sliventza,[4] niches for holding the plaques have been cut in the rock, and sometimes isolated rocks have been incised for the same purpose.[5]

As is well known, the native Thracian divinities, like those of other countries, are represented as Græco-Roman types ; it is therefore difficult, and very often impossible, to arrive at the original character of any particular divinity, concealed as he is under a foreign dress, especially as our knowledge of the Thracian religion in the classical period is derived from very scanty sources. The rider-hero is a case in point : to make a pictorial representation of their Rider God (an original Thracian conception), the Thracian sculptors appropriated the Greek type of rider-hero, together with the name Ἥρως.[6] Probably they took as their model such monuments as the stele from Abdera,[7] where the hero is shown armed and wearing tight breeches, which betrays local Thracian influence.

These hero-reliefs may be divided into three main types,[8] of which only the second concerns us here, where the hero is shown as a hunter, riding (FIG. 1). He generally appears as quite youthful, with thick curly hair, and no beard ; very occasionally he is bearded ; he wears a chiton, and a chlamys flutters behind him ; often too he has breeches and hunting-boots ; he brandishes in his uplifted right hand a spear or a lance, which is often apparently only painted in. Actually the traces of colour found on many reliefs show that the often crude portraits were supplemented and animated by the use of paint.[9] Less frequently the rider carries a round or oval shield in the hand which is hidden behind the horse's head. Apart from the principal figure, an altar is generally shown in the right corner of the relief, and behind it a tree and a snake ; sometimes one or two female worshippers in long garments stand before the rider ; behind him stands a servant, holding the horse's tail in his right hand and often a lance in his left. Below the horse there is generally a dog, or else a lion takes his place.[10] The most frequent

[4] Pauly RE. VI A, 479. [5] Pauly RE. VI A, 484.

[6] Casson, *Macedonia, Thrace and Illyria*, 250.

[7] Avezon and Picard, *Bull. corr. hell.*, 1913, XXXVII, 118 ; Kazarow, *Arch. Anz.* 1918, 50 ; *Cambr. Anc. Hist.*, plates III, 54 c. Cf. Seure, *Rev. ét. anc.* 1912, XIV, separate impression, 25.

[8] Pauly RE. suppl. III, 1137.

[9] Seure, Musée de Belgrade : *Rev. ét. anc.* 1923–4, separate impression, 18.

[10] *Germania*, 1933, XIX, 315.

quarry is a boar, an animal which seems to have been common throughout Thrace ; we may note, for example, that the harbour of Stageira was called Kapros (='boar').[11] Probably the fight of the hero with the boar had a religious-mystic significance : the boar symbolizes the malignant power that threatens man, which the hero tracks down and destroys.[12]

Another common scene shows a lion gripping or tearing to pieces a bull which has been beaten to its knees. This group, which is of eastern origin, has not as yet been definitely interpreted. Cumont remarks :[13] ' it is most probably an astrological symbol, the bull is the zodiacal sign of the spring, the lion that of summer ; and the vegetation of spring is destroyed by the heat of the dog-days '.

It is plain from the reliefs that apart from being a hunting god, the hero was principally honoured as a chthonic divinity,[14] in which capacity he was considered as the protector of vegetation and giver of fertility. In a relief in the Bruchenthal museum, a man is shown below the rider, tilling a field ; in the strip beneath, the peasant with his wife is seen bringing an offering to the hero.[15] On a fragment from near Silivria,[16] three pairs of bulls are shown under the figure of the rider. The hero 'Pyrmerulas',[17] who occurs in some Thracian dedications, is probably to be explained as a protector of the corn ; while in other dedications the hero also served as protector of the herds,[18] and as such bore the name Suregetes.[19] An interesting relief from Varna is dedicated to the hero Manimazos, by a company of tunny-fishers (*θυνεῖται*) ;[20] and on a hitherto unpublished relief from southern

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[11] Strabo VII fr. 35 ; Mela II, 2, 30. Perdrizet, *Rev. numism.* 1903, VII, 313.

[12] Perdrizet, l. c. ; Rostovtzeff, *Artibus Asiae*, 1932, V, 104 ; Picard, *Rev. hist. Relig.* 1922, LXXXVI, 154.

[13] *Orient. Relig. im röm. Heidentum* (1931), 223, n. 7. Cf. Graillot, *Mélanges Perrot*, 1903, 143 ; Delatte, *Bull. corr. hell.*, 1913, XXXVII, 257.

[14] Cf. Tudor, *Ephem. Dacor.* 1937, VII, 225.

[15] Rostovtzeff, *Mém. présentés à l'Acad. des Inscr.* XIII, 2, 399.

[16] Seure, *Bull. corr. hell.*, 1912, XXXVI, 591, fig. 29.

[17] Pauly RE. suppl. III, 1142 ; VI A, 476.

[18] Seure, l. c., 592 ; Rostovtzeff, *Gesellsch. und Wirtsch. im röm. Kaiserreich*, I, 344 ; Pauly RE. VI A, 483.

[19] Pauly RE. VI A, 476.

[20] Salač and Škorpil, *Rozpravy Česke Akad.*, 1928, 12, no. 4 ; Rostovtzeff, *Gesellsch.* etc. II, 312 ; Jorga, *Istoria Românilor*, I, 1, 83.

Bulgaria a river-god is depicted beneath the figure of the hero.[21] The fact that many of the shrines were near springs shows that the god was also thought of as the giver of water.

It may be seen therefore that the hero was a powerful nature-divinity, whose influence extended to all human activities. This will explain his close connexion with other deities also (*e.g.* Apollo, Asclepius, Dionysus, the Dioscuri, Silvanus); on two reliefs from Moesia he appears as the protector of horses along with Epona.[22]

Saint George

The people of Bulgaria regard St. George's day (April 23) as being probably of greater importance than even Easter itself. Many folk-songs celebrate the saint; a typical motive is as follows. On his feast-day, St. George goes out to inspect the fields, meadows and pastures; he may find the vegetation and the cattle in good condition, but sometimes there is a drought, and the fields are athirst for rain, the cattle long for green fodder. So the farmers and herdsmen beg him to send rain, and he 'opens earth and heaven'; abundance of rain falls, and the crops again thrive. In other variants, the saint gives abundant dew on his feast-day; but later, on Ascension Day, if the crops are already in ear, he makes a fresh round of the fields. Very often the battle of the saint with the dragon is told. In his journey through the fields he meets a three-headed dragon and orders him off; but the dragon will not obey, and the saint does battle with him, defeats him, and cuts off his heads, from which spring three rivers: one of wheat, for the farmers; one of milk, for the herdsmen; and one of wine, for the vineyard-workers. In many versions the saint himself appears as the herdsman, who, leading his cattle to the pastures, meets the dragon and slays him after a fight.

I would add that many folk-customs, partly magic in character, but sometimes purely games, are connected with the eve and day itself of St. George.[23] On this day the straw preserved from Christmas Eve is burnt in the fields, or an Easter egg is buried in the ground. The herdsmen must not drink milk before this day, or kill any lambs. The

[21] The hero-relief from Urum-jeni-koï was originally built into the wall of the village well; after it had been removed and transferred to the museum at Sofia, the flow of water was diminished: so a peasant told me when I visited the village in 1926 (*Arch. Anz.*, 1927, 331).

[22] Pauly RE. suppl. III, 1143 ff.

[23] Arnandoff, *Die Bulgar. Festbräuche* (Leipzig, 1917), 39 ff.

milk is drawn in a special way on the feast-day, and then given to the poor ; and on this day too a male lamb is brought as an offering, blessed by the priest, and afterwards eaten at the communal table.[24]

Thus it is clear that in folklore the person of St. George is closely connected with that of the hero. Christianity entered Thrace fairly early ; the Bessi in Rhodope were converted by Bishop Nicetas of Remesiana in the fourth century. It is quite probable that the two religions mutually influenced each other.[25] The Thracian peoples were later absorbed by the Slavs who overran the Balkan countries ; but the preservation of many old Thracian place-names, especially names of rivers, up to the present day,[26] leads us to conclude that the Slavs took over also the Thracian religious beliefs. Thus we can suppose that the new rider-saint appropriated the favour which the hero enjoyed among the original population ; he entered into the inheritance of the hero, just as for example he succeeded Mithras in the region of the Caucasus.[27]

The continuity of the cult and of the cult-places—in spite of the change in the people of the country—is shown by the fact that in Bulgaria, chapels of St. George are often built on the sites of the hero's shrines. For example, on the slope of Rhodope, south of the village of Varvara (Barbara) in the canton of Pasardžik, there is a mountain-spring, near which is a chapel of St. George ; reliefs of the hero have been found near by,[28] and recently also a pillar with a dedication to Asclepius. In the chapel of St. George in the village of Zabernovo (canton Malko-Tirnovo in southern Bulgaria) a hero-relief, found in the neighbourhood,[29] stands as an ikon of the saint. Dumont in his day[30] saw an ancient hero-relief in the Armenian church at Plovdiv, which was honoured as a representation of the saint, with wax tapers burning before it. At Sofia, too, there are hero-reliefs in the museum, which formerly served as ikons in churches ; on many the name of the saint is scratched in Slav lettering. An especially instructive example is a

[24] From information given me by M. Vakarelsky, Curator of the ethnographical museum at Sofia.

[25] Dumont, *Mél. d'arch.*, 290.

[26] Tomaschek, *Die alten Thraker*, II, 2, 91 (*Sitzungsb. Wien. Akad., Phil.-Hist. Kl.*, CXXXI, 1 Abh.).

[27] Cumont, *Rev. hist. Relig.*, 1936, CXIV, 25 ; *JRS.*, 1937, XXVII, 69.

[28] *Bull. de l'Inst. Arch. Bulg.*, 1926–7, IV, 115.

[29] Cumont, *JRS.*, XXVII, 69, n. 34.

[30] *Mél. d'arch.* 290.

relief which was found in a private house at Plovdiv among some other Christian ikons ; when the woman of the house was asked to present it to the museum, she only consented reluctantly, crossed herself three times before the image, kissed it, and gave it to the director of the museum with much agitation.[31]

Dumont also remarked[32] on the striking similarity between the representation of the hero and that of St. George : ' il serait intéressant pour l'histoire de l'art, de savoir quelle a été l'influence de cette représentation sur le type consacré de saint-Georges qui parait avoir été fixé dès les premiers siècles du christianisme '. As is well known, no explanation has yet been found[33] of the origin of the Christian rider-saints, either in general or St. George in particular ; naturally we cannot go into this question here. Von Wesendonk[34] was probably right in remarking that ' more than one factor must have been at work in the development of the type of the Christian saint striking down the dragon '. It is not improbable that among the ancestors of the typical representation of St. George which I have mentioned must be counted also that of the hunting rider-hero ; he not only exercised a direct influence, but perhaps also an indirect one through the medium of the Egyptian *Heron* (= Horus) who, according to Rostovtzeff's conclusions[35], probably appropriated Thracian characteristics among others.

Of course, the snake in the Thracian reliefs is not the hero's enemy, but a symbol of the soul. This was either not understood by the Christian artist, or adapted by him to suit his conception of the saint. Such an adaptation was especially natural if only those types were available in which the snake is shown not in front of the rider, but beneath him ; cf. a relief from the shrine of Asclepius at Glava-Panega[36] (FIG. 2). There is another at Karaïssen (canton Svištov)[37]. In this connexion it may be noted that the Thracian hero was often depicted with a nimbus ; *e.g.*, on two hitherto unpublished reliefs (FIGS. 3 and 4), one from Čauševo (now Methodievo, canton Jărgovište), the other from the district of Šumen.

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[31] *Arch. Anz.*, 1926, 9. [32] l. c., 219. Picard, *Rev. hist. Relig.* LXXXVI, 152.

[33] Cabrol, *Dict. d'arch. Chrét.*, VI, 1021 ; Lucius, *Anfänge des Heiligenkultes* (1904), 86, 239, concludes that the beginnings of the St. George legend go back to the 4th century.

[34] *Orient. Literaturzeit.*, 1920, XXIII, 268.

[35] *Aegyptus*, 1933, XIII, 511 ; *Yale Class. Studies*, 1935, V, 209 ff.

[36] Dobrusky, *Arch. Mitteslides Nationalmus. in Sofia*, 1907, I, 72 no. 70 ; Pauly RE. suppl. 1135, VI A, 497.

[37] Dobrusky, l. c., 111, no. 160.

Finally, we must also consider the representations of the so-called ' Thraco-Mithraic ' or ' Danubian ' rider, in which, under the horse's feet, there is a man's figure lying outstretched—clearly a vanquished enemy. Sometimes there is a large fish instead of a human form.[38] These may also have influenced the development of the Christian type of dragon-slaying saint.

Many of the hero-reliefs are in bas-relief, and look as if they had been carved out of wood ; such probably served later as models for the wooden figures of the saint. There is a wooden ikon from Sozopol (FIG. 5) now in the ecclesiastical museum at Sofia.[39] On a rectangular framed wooden tablet are carved the figures of SS. George and Demetrius, riding side by side ; St. George has pierced with his lance a crocodile or hippopotamus rising from the water, while St. Demetrius has pierced the head and part of the body of a snake, which is winding itself round the stem of a double-topped palm-tree (this recalls the tree with the snake, common in the Thracian votive reliefs). With his left hand, St. George carries a round shield, as does also the Thracian rider on several reliefs ; his bow can be seen above the horse's back. In later times the wooden tablet was painted over in colour.

[38] See Rostovtzeff, *Mém. présentés*, etc., XIII 2, 385 ; Dölger, *Ichthys* II, 420 ; Tudor, *Ephem. Dacor.* VII, 189 (an exhaustive account).

[39] Gošev, *Jahrb. der Univ. Sofia*, Theol. Fakult. (1928–9), VI, 1.; the author, to whom I am also indebted for the photograph, ascribes the wooden ikon to the 10th–11th centuries ; he also adduced the Thracian reliefs for comparison.

PLATE I

FIG. 1. THE HUNTER RELIEF FROM GLAVA-PANEGA, BULGARIA
(*see* p. 291)

facing p. 296

PLATE II

FIG. 2. SHOWING SNAKE RELIEF FROM THE SHRINE OF ASCLEPIUS, GLAVA-PANEGA, BULGARIA
(*see* p. 295)

PLATE III

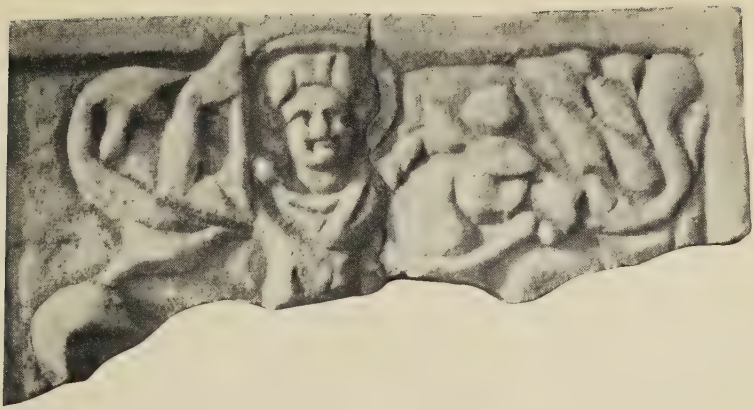

FIG. 3. THRACIAN HERO WITH NIMBUS, CAUSEVO, BULGARIA
(*see* p. 295)

FIG. 4. THRACIAN HERO WITH NIMBUS, ŠUMEN, BULGARIA
(*see* p. 295)

PLATE IV

FIG. 5. WOODEN IKON OF SS. GEORGE AND DEMETRIUS, SOZOPOL, BULGARIA

(*see* p. 296)

The Megalithic Tombs of Northern Europe[1]

by G. E. Daniel

DURING the 19th century conclusions of great value concerning the origin and diffusion of the megalithic tombs of Europe were arrived at by the study of a few tombs in various regions : Montelius's *Orienten och Europa*[2] marks the culmination of research on these lines. In the last twenty-five years it has been gradually realized that before we can speak with assurance of the many problems which the megalithic tombs involve, before we can disperse what has aptly been called ' the murky fog surrounding the megalith question ',[3] we must have accurate and detailed regional surveys of the prehistoric burial-chambers of south-western, western and northern Europe. As is well known, such surveys have already been produced in many regions ; for example those in Iberia by Obermaier, Vergileio Correia and Pericot y Garcia, and in Brittany by le Rouzic and Forde. In the British Isles we have been exceptionally fortunate in this respect : the work of Crawford and Hencken in England, of Hemp and Grimes in Wales, of Childe in Scotland, and of Estyn Evans in northern Ireland, has made the megalithic tombs of the British Isles better known than those of any comparable region in Europe.

In all these careful surveys, and in the many scientific excavations that have recently been conducted, we are obtaining the basis for a re-survey of all the problems associated with these prehistoric burial-chambers : but before such a survey can be carried out, it is imperative that not only parts but the whole of western and northern Europe

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[1] A review of two recent books on the megalithic tombs of Scandinavia and Germany : C. A. Nordman, *The Megalithic Culture of Northern Europe*, no. 3 of vol. 39 of Suomen Muinaismuistoyhdistyksen Aikakauskirja (Finska Fornminnesföreningens Tidskrift), *pp.* 137, 67 *text figs. Helsingfors*, 1935, 15*s od.*; and Ernst Sprockhoff, *Die Nordische Megalithkultur*, *pp.* 164, 91 *text figs.*, 66 *plates*, 6 *maps. Berlin and Leipzig*, 1938 ; RM. 7.20 (*unbound*), 8.20 (*bound*).

[2] *Antiqvarisk Tidskrift för Sverige* (Stockholm, 1905), XIII, 1–252.

[3] C. F. C. and J. Hawkes, *Arch. Journ.* (1933), XC, 321.

should be covered with a network of surveys comparable with those we have mentioned. Until recently two large areas remained in which the ' murky fog ' gathered thickest—the south of France, and Scandinavia and north Germany. The latter region comprises the megalithic tombs of Denmark, Sweden south of a line from Oslo to Stockholm, north Germany, and north Holland, which, since the early works of Montelius, Madsen, and Sophus Muller, have not been studied on a general basis with the care they deserve. Recently, however, van Giffen has provided us with a magnificent account of the Dutch megalithic material,[4] while Schwantes has described afresh the material from Schleswig-Holstein ;[5] and in the two books we are considering here, we are given a first-rate survey of the north European material by two archaeologists whose knowledge of the Scandinavian and north German tombs is unrivalled. These works not only provide a much-needed and readable account of northern megalithic culture for all interested in prehistoric burial-chambers, but they also deal carefully and clearly with the many complex problems involved in a manner which all specialists will value and admire. There can be no doubt that when future archaeologists come to assess the progress of megalithic research, they will give the highest commendation to these works of Nordman and Sprockhoff which do so very much to dispel the thick fog of ignorance which, as we have said, despite the publication of many isolated plans, until recently enveloped these northern tombs.[6]

Professor Nordman's work on northern megaliths is already well known to us through a number of excellent articles from his pen :[7] recently he was invited by the Society of Antiquaries of Scotland to give the Rhind Lectures for 1932 on the Megalithic Culture of Northern Europe and its connexions with that of the south and west, and his present work is, as he says in his preface, ' an unaltered reprint of the Rhind Lectures '. He has, however, added many bibliographical footnotes (which are in themselves of very great value), and a number of figures. In the first two of his six lectures, Nordman discusses the form, grave-goods and burial rites of the megalithic tombs of northern Europe : he confines his attention mainly to the Danish and Swedish

[4] *De Hunebedden in Nederland*, 1925. (English Translation, 1927–8).

[5] *Vorgeschichte Schleswig-Holsteins*, 153 ff.

[6] It still envelops, alas, the megalithic tombs of the south of France.

[7] For instance *Jaettestuer i Danmark, Nordiske Fortidsminder*, 1917. II ; *Studier ofver gånggriftkulturen i Danmark, Aarbøger for nordisk Oldkyndighed* (1917).

material. In his third lecture he discusses the spread of the megalithic culture in northern Europe and its relations with other cultures in that area. His fourth and fifth lectures describe the origins of the Scandinavian megaliths and their relations with the megaliths of other parts of Europe : while his last, and most valuable lecture, deals admirably with the chronology of the Scandinavian tombs.

Dr Sprockhoff, who gave us a few years ago a splendid summary of the megalithic tombs of northwest Germany,[8] in this book extends his survey to cover all the megaliths of north Germany. His title is somewhat misleading for he does not discuss, save incidentally, the burial-chambers of Denmark and Sweden. Sprockhoff's work is divided into seven sections, the first six of which deal respectively with morphology and burial-rites, weapons, tools and implements, pottery, settlement sites, general cultural conditions, and the chronology of the tombs ; while his final section is a short historical summary. The first three sections naturally constitute the main part of the book, and are illustrated with a splendid series of plans and photographs : in addition to this, there are six excellent maps showing the distribution of dolmens, of all megalithic tombs, of thin butted axe-heads, of early flint daggers, of the passage-grave groups, and of the globular amphorae culture (the Kugelflaschkultur) in Germany. There is no general index to the book, but there is an alphabetical list of all the sites and finds mentioned in the text. Sprockhoff's plans are especially valuable and we have no longer to turn up the crowded diagrams of Krause and Schoetensack for illustrations of the north German galleries.

Sprockhoff's book is not only of the greatest importance in the study of megalithic tombs and of northern prehistory in general : its publication is an important event in the archaeological world, for it is one of the first two volumes to be published in a new series of archaeological monographs edited by Dr Sprockhoff himself under the title of *Handbuch der Urgeschichte Deutschlands*. Sprockhoff's study of the German megaliths is the third volume in this series, Dr Buttler's on the Danubian and Western Neolithic cultures (no. 2 in the series), is the other published volume,[9] and the whole series is to cover in twenty volumes the archaeology of Germany from the Palaeolithic period to

[8] *Zur Megalithkultur Nordwestdeutschlands, Nachrichten aus Niedersachsens Urgeschichte*, 1930, no. 4, *pp.* 1–55.

[9] W. Buttler, *Der donauländische und der westische Kulturkreis der jüngeren Steinzeit* (1938).

the Vikings. The promised volumes include Schwantes on the Palaeolithic and Mesolithic, Sprockhoff on the German Bronze Age, Kraft on the Urnfields and von Merhart on the Hallstatt culture. The series is admirable in conception, and if all the volumes are as well written, as scholarly, and as well produced as the two already published, they will form a most remarkable contribution to the advancement of archaeological research. Is it too much to hope, in passing, that the example of this magnificent German series will cause a similar series to be conceived dealing with the archaeology of Great Britain ? Surely we are not lacking in the initiative and financial support which is needed to carry through such a series to success ?

One is perhaps inclined to estimate the importance of the various regions of western and northern Europe that possess megalithic tombs in terms of the literature on these tombs, and of the quantity of plans that have been published. We, in the British Isles, are inclined to regard our own megalithic tombs as of very great importance, but there can hardly be many more than 1500 prehistoric burial chambers existing in the British Isles in recognizable form at the present day. It comes, then, as a most salutary shock to realize the tremendous number of megalithic tombs in Scandinavia and north Germany. Shetelig refers to 3,600 megalithic tombs surviving in the Danish Isles :[10] Almgren's maps show over 400 dolmens and passage-graves in south Sweden :[11] and now Sprockhoff (see his maps I and IV) reveals the very great number of megalithic tombs in north Germany. This statistical evidence alone shows how important are the Scandinavian tombs, and how welcome must be these new analyses of the northern megalithic material. Sprockhoff has much of great interest to say of the destruction of megalithic tombs ; and he publishes two highly instructive maps of the island of Rugen showing the distribution of megalithic tombs in that island in 1829 and again in 1929. In 1829 (fig. 62) there were no less than 229 megaliths on the island, yet a hundred years later (fig. 63) there were only 38. Of course some of the 229 are probably included on very doubtful literary references, but, even so, these maps provide a valuable commentary both on the destruction of megalithic tombs in general, and, if the destruction on Rugen is to be taken as fairly typical of the whole northern region, on the original numbers and importance of the megalith-builders in the north.

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[10] *Scandinavian Archaeology* (Oxford, 1937), 63.

[11] *Sveriges Fasta Fornlämningar från Hednatiden* (Uppsala, 1934), figs. 22 and 23.

It would be easy and idle to criticize both the books of Sprockhoff and Nordman with which we are here concerned for not being what they never set out to be, namely, what may be called 'catalogue-surveys' of the megalithic tombs of northern Europe. Yet regional survey, before it can be satisfactorily accomplished, must be accompanied by lists of sites, and with a maximum number of maps and plans. In England we have been especially fortunate in this respect, and possess two excellent catalogue surveys of our megalithic monuments, the one done by the Megalithic Survey of the Ordnance Survey, and the other by the Research Committee on Rude Stone Monuments of the British Association for the Advancement of Science. Both these surveys are well on the way to completion, and an excellent series of maps and lists has been published by the Ordnance Survey embodying the results of its Megalithic Survey. In the north of Ireland a similar inventory of megalithic monuments is being prepared under Estyn Evans, and Miss Collum is preparing, with le Rouzic, an inventory of the burial chambers of the Morbihan. Then, of course, we have in van Giffen's great work, already mentioned, a catalogue survey of the Dutch megaliths which is beyond all cavil, save, perhaps, on the grounds of its size. In northern Europe no such catalogue-surveys exist :[12] and we have, for instance, to go back to the magnificent volumes of Madsen for our best plans of the Danish tombs. Sooner or later archaeologists in northern Europe must set about producing detailed lists and maps of their megalithic monuments, and must contemplate the publication of corpora of tomb plans. These are tremendous labours—we have already commented on the number of the Scandinavian megaliths; but they are as necessary as they are tremendous. No one is more fitted to undertake their direction than the two archaeologists whose analytical accounts of the northern megalithic tombs we are here discussing.

Both Nordman and Sprockhoff base their morphological analyses of the Scandinavian and north German megalithic tombs on the classifications of Montelius: Sprockhoff on the simple *dos-gånggrift-hällkist* classifications which Montelius first produced in 1874 at the Stockholm Congress, Nordman on the more elaborate division into nine types which Montelius detailed in his *Orienten och Europa*. Both, however, introduce interesting modifications of these classifications.

[12] Except on a very small scale such as that of Krause and Schoetensack in the Altmark (*Zeitschrift für Ethnologie*, 1893, xxv, 105 ff.), and of Enqvist on Orust and Tjörn (*Stenålderbebyggelsen på Orust och Tjörn*, Uppsala, 1922).

Thus Nordman prefers to classify as passage-cists sites such as Mönsted in Jutland, which Montelius described as passage-graves with the passage in line with the long axis of the chamber. Sprockhoff singles out for especial treatment what he calls *die westeuropäischen steinkisten*: some of these (*e.g.*, Züschen, Fritzlar) have a portholed septal slab. Sprockhoff is of course dealing only with the German sites: we must group with them the similar portholed galleries in Vastergotland, and the two well-known sites at Weris in southeast Belgium. Montelius insisted that only the cists or short galleries were ever completely covered in by barrows or mounds and this generalization is still often repeated nowadays; but Nordman shows quite clearly that this is not true and that almost all forms of megalithic tomb in northern Europe are sometimes found covered with barrows: 'it seems probable', he writes (p. 16), 'that the actual passage-grave as well as the grave-cist was, as a rule, covered by the barrow'.

Even so, these modifications are not enough to make the Montelian classification a really workable typology. The Montelian scheme distinguishes very properly between the normal passage-grave with a round or polygonal chamber found all over Atlantic Europe, and the T-shaped passage-grave which, despite alleged parallels in many parts of western Europe, is generally agreed to be a Scandinavian development of the normal passage-grave; but the classification does not recognize, nor does Nordman make this point, that there are a number of undifferentiated or V-shaped passage-graves in Scandinavia, that is to say, passage-graves such as Forslov, Ringsted, Söro, Sjaelland,[13] and Herslev, Langeland,[14] in which there is little formal distinction between passage and chamber; and that some forms of these undifferentiated passage-graves (for instance Skåningegård, Horns, Frederiksborg, Sjaelland[15]) correspond to the 'entrance graves' described by Hencken in the Isles of Scilly. While the evolution of the T-shaped passage grave is an exclusively Scandinavian development, the development of the undifferentiated passage-grave, and, finally, of the entrance-grave, is one which also occurs in Spain, Brittany,[16] and the Channel Isles. There is no reason to suppose that these developments are connected with each

[13] Madsen, *Gravhøje og Gravfund fra Stenalderen i Danmark* (Copenhagen, 1896), no. 45.

[14] Montelius, *Orienten och Europa*, p. 172, fig. 169.

[15] Madsen, *op. cit.*, no. 3.

[16] The Scilly tombs are probably derived from the Breton developments.

other ; we may regard the evolution of the v-shaped passage grave in Scandinavia as parallel to similar developments in southern and western Europe. Forms such as Skår, Stenkyrka on Tjörn,[17] and Hjadstrup on Fyen,[18] are probably intermediate between normal passage-graves such as Sjöbol on Bohuslan and Broholm on Fyen and the undifferentiated passage-graves.

It seems likely too that the Montelius dolmen class should be subdivided in greater detail than does Nordman. It is not enough to distinguish between dolmens in round and long mounds : distinction must also be made between rectangular and polygonal (or round) chambers. The polygonal dolmens[19] usually occur in round mounds and but rarely in north Germany, while the rectangular dolmens are most often found in long mounds and are very common in north Germany.[20] I am never clear on what formal grounds some of the rectangular dolmens are distinguished from the small cists : many of the rectangular dolmens are below the ground level[21] and are of roughly the same proportions as the cists.

Nordman emphasizes that the vast majority of the long barrows in Scandinavia and north Germany are not ovate or wedge-shaped, as are most of our British long barrows, but rectangular, *i.e.*, they do not have one end wider than the other. Sprockhoff figures (figs. 42–44) some of the north German long barrows that are wedge-shaped : he shows that they are confined in the main to Rugen and Pomerania, and that the chambers are never placed at the broad end of the barrow, nor is there any formal element such as a forecourt. Indeed the German wedge-shaped long barrows must be regarded as variants of the normal rectangular long barrow of Scandinavia, and can have no

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[17] Montelius, *op. cit.*, p. 147, fig. 146.

[18] ibid. p. 172, fig. 168.

[19] I use the word dolmen throughout here in the Montelian sense of a small single chamber, and when I say rectangular or polygonal dolmen I refer to the shape of the chamber and not to that of the surrounding barrow. The terms *runddysser* and *langdysser* I translate here as ' dolmens in round barrows ' and ' dolmens in long barrows ' and not ' round dolmens ' and ' long dolmens ' as do many archaeologists (*e.g.*, Shetelig and Falk recently in their *Scandinavian Archaeology*).

[20] Polygonal dolmens occur very rarely in long mounds. Rectangular dolmens occur more often in round barrows and are then confined mainly to Denmark.

[21] Such as those recently figured by Schwantes, *Vorgeschichte Schleswig-Holsteins*, figs. 186–188. See also Sprockhoff, *Die Nordische Megalithkultur*, figs. 1–7.

connexion with the British wedge-shaped barrows. Some of the north German long barrows figured by Sprockhoff are excessively elongated : one at Visbecker Braut (p. 39, no. 52) is about twelve times as long as it is broad, while the Putlos barrow (p. 39, no. 53) is 375 feet long but its width is only 17 feet.

Nordman notes the presence of rectangular long barrows in south Brittany, and is inclined to connect the Scandinavian long barrows with these. We must distinguish at least four types of long barrow in Brittany : (1) the unchambered wedge-shaped long barrow such as Manio 1, 3, and 5 ;[22] (2) the wedge-shaped long barrow with a chamber at its broad end, such as Grah-niol in Rhuis ; (3) the rectangular long barrow with closed chamber such as St. Michel or, of a different kind, Kerlescan and Kerlearac ; and (4) the rectangular long barrow with one or more chambers opening into one of its broad sides (*e.g.*, Mané Lud, Mané Kerioned). It is only with the two latter classes that the Scandinavian long barrows may be compared, and the great difference between the form of the closed chambers in the Breton and Scandinavian long barrows makes the fourth class the only valid parallel to the northern long barrows. Indeed such a monument as Mané Kerioned, which has two undifferentiated passage-graves opening into the broad side of a rectangular long barrow, compares very accurately with Herslev on Langeland. But I doubt whether there is any generic connexion between these two sites : W. C. Lukis suggested that the Breton long barrows of class 4 originated through adding chambers to already existing round barrows, and I think that a similar process may have given rise to the Scandinavian long barrows. Nordman himself, writing of the long barrows with several chambers, says they were ' obviously enlarged later in many cases '(p. 18). Professor Childe thinks that the evolution of the T-shaped passage-grave would naturally give rise to an elongated barrow,[23] and this theory has a great deal to commend it ; but highly-exaggerated T-shaped passage-graves do occur in round barrows (*e.g.*, the site near Sparresminde on Moen).[24] I think it is the building of more than one T-passage grave in a row that gave rise to the long barrow in Scandinavia, and that this long rectangular form, once standardized, was then built around other kinds of chambers.

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[22] This type of monument in Brittany has recently been described by Piggott in ANTIQUITY, 1937, pp. 441 ff.

[23] *Trans. Glasgow Arch. Soc.*, VIII, 133–4.

[24] Madsen, *op. cit.*, no. 57.

In an earlier article,[25] Professor Nordman was inclined to agree with Montelius's first thesis, namely that dolmen, passage-grave, and long gallery, formed an evolutionary series ; but here he accepts Montelius's latest views, expressed in *Orienten och Europa*, that the Scandinavian passage-graves represent a separate movement from western and southern Europe, and I think there can no longer be any doubt that this is so and that the northern dolmens did not develop in Scandinavia into passage-graves. There has, of course, been much argument as to which area of passage-grave culture in Atlantic Europe provided the origin of the Scandinavian graves : Childe has argued for north Scotland and Nordman here argues for Brittany, but it seems to me that the claims of southern Iberia are as strong as any. Sophus Muller first emphasized the connexions both in form and in decoration between the passage-grave pottery of Scandinavia and Iberia : the oculi and rayed sun ornament on some of the Scandinavian pots must surely imply Spanish connexions, and it should be remembered that amber (presumably Danish) was found at Los Millares and Alcala.

Since Fergusson in 1872 published his distribution map of megalithic monuments and indicated by a series of arrows the routes he imagined the megalith-builders had taken, it has been widely held that the movement from southwest Europe to Scandinavia which gave rise to the northern megaliths proceeded around the north of Scotland. Shetelig, however, seemed to favour the English Channel as the route taken by these early voyagers,[26] and Nordman certainly does. He is sharply critical of the views of Fox and Rydbeck, which suggest continuous land in the North Sea and no English Channel as late as the end of the third millennium B.C., when these megalithic migrations were taking place. There is no shadow of proof, he says, of the existence of continuous land in the North Sea during the period of megalithic culture, and I think that one must agree with him. Clark has recently summarized very clearly the evidence for the date of the formation of the English Channel,[27] and we can no longer argue that the Pentland Firth route was the one adopted by the megalith-builders because of the non-existence or dangers of the English Channel. The absence of strong Spanish affinities in the decoration of the pottery from the north

[25] ' Some Baltic Problems ', *Journ. Roy. Anth. Inst.*, 1922, p. 36.

[26] *Scandinavian Archaeology*, 58–9.

[27] *Proc. Preh. Soc.*, 1936, 239.

Scottish tombs, and their presence in some Scandinavian megalithic pottery, would suggest that the movement from Spain (or by Brittany from Spain) to the north of Europe, did really take place through the Straits of Dover.

Nordman emphasizes in this book a point he made earlier,[28] namely that the earliest Scandinavian passage-graves (*i.e.* those with round or polygonal chambers such as Sjöbol and Broholm) are found in east Jutland, the Danish islands in the sound, and the coasts of Bohuslan and Skåne. Sprockhoff however republishes a plan of the ' Denhoog ' on Sylt (p. 25, no. 27) and this tomb, together with Ulbersdorf in south Dithmarschen[29], suggests to me that there may have been another early centre of passage-grave culture in northern Europe, *i.e.*, in western Schleswig-Holstein. Nordman and Sprockhoff agree in deriving all the Scandinavian passage–graves from these early types : the T-shaped passage-graves and the undifferentiated passage-graves are the most notable developments. In Sweden the T passage–graves become very large and angular—those in the Karleby–Luttra–Falköping area of Skaraborgslan are well-known. In Denmark side-chambers are developed and elaborated (Nordman republishes his plan of the remarkable monument at Alsbjerg), and double-passage graves developed. In north Holland and north Germany the passage to the T passage–grave becomes shorter and shorter, until in the end, as I believe, the long gallery was evolved by omitting the small passage. This line of development to the long gallery seems to me more likely than that suggested by Montelius, which is criticized by Nordman, although he does not suggest any alternative interpretation.

Sprockhoff shows very clearly that the portholed galleries of south Germany and Belgium represent a spread from the Paris basin, and it seems not unlikely that, as Kendrick argued in his *Axe Age*, the Vastergotland portholed galleries derive from the same area via sites such as Weris and Züschen. Nordman, however, disagrees with this view, and would derive the idea of the porthole in the Vastergotland galleries from the Thuringian cists (such as Allstedt in Weimar) and ultimately from the Caucasus. Of course both theories are faced with the same difficulty : the complete absence of portholes in the megaliths in the area between south Germany and Vastergotland.

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[28] In his *Aarbøger* article already cited.

[29] Planned by Schwantes, *Vorgeschichte Schleswig-Holsteins*, p. 182, fig. 196.

We in Britain are naturally most interested in the connexions between the British and north European megalithic cultures. It has frequently been argued that the Scandinavian dolmens derive from Great Britain, the ordinary passage-graves (such as Sjöbol and Broholm) from the north Scottish tombs, the T shaped passage-graves from monuments such as Wayland's Smithy or Nympsfield in the Cotswold–Severn area, or from the curious Orkney monuments such as the Holm of Papa Westray, Unstan, Quoyness, and Quanterness, and that the Scandinavian portholed galleries must be connected with the portholed megalithic tombs of England. Nordman argues that all these relationships are very unlikely, and I agree with him that it is improbable that any of the elements of the northern megalithic cultures were derived from the British Isles. On the other hand it is likely that the Medway tombs represent a spread to Britain of a north European type: Sprockhoff's plans show that the Medway tombs are easily paralleled in north Germany.

There is one major criticism of the work of both Nordman and Sprockhoff to be made; it is that they do not discuss at length the problem of the origin of the Scandinavian dolmens. They accept the Montelian sequence of the priority of the dolmens over the passage-graves and of the passage-graves over the galleries, and they agree in the derivation of the Scandinavian passage-graves from western and southern Europe, but they pay scant attention to what is, in my mind, one of the major problems in modern megalithic theory, this problem of the antecedents of the northern dolmens. The problem is perhaps not so relevant to Sprockhoff's researches: he publishes a fine distribution map of dolmens in north Germany and derives the German dolmens from Denmark, and this is, no doubt, correct. But to Nordman's survey this matter is of the greatest and most vital importance and one could wish that he, with his intimate knowledge of the northern megalithic material, had devoted a whole lecture to its elucidation.

The dolmen complex in the north has four morphological elements: the round or polygonal chamber, the rectangular chamber, the round mound, and the straight-sided rectangular mound. Nordman fully recognizes that though some of these elements may be matched in western Europe (*e.g.*, the chambers in Britain and the barrows in Brittany) we cannot point to one area outside Scandinavia and north Germany in which all these elements occur: so that, as he says (p. 85), 'there is, therefore, a certain degree of probability in favour of the early dolmens in Denmark being a form that originated in that country'.

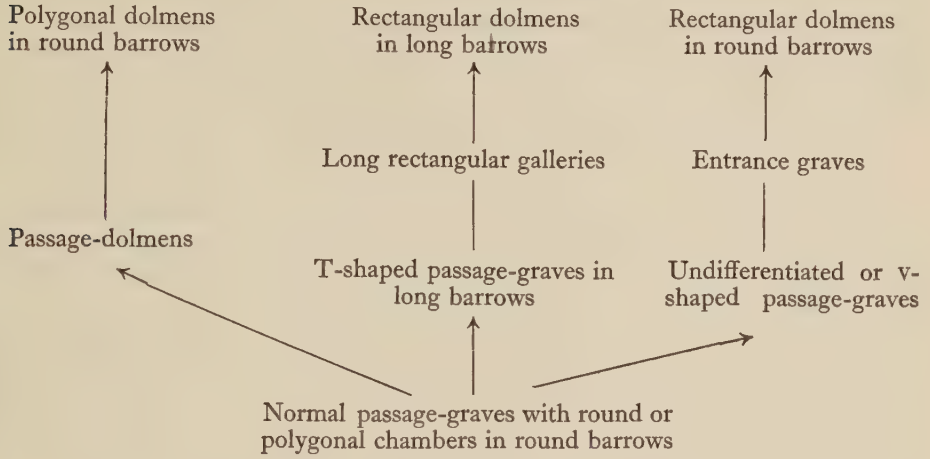
So far I am in complete agreement with Professor Nordman : indeed no impartial student of the comparative morphology of megalithic tombs in Europe can come to any other conclusion than that the northern dolmen did originate in the north. The problem is, in what way did it originate ? Was it created, like a conjurer's trick, apparently out of nothing, or was it evolved from existing megalithic tombs in the north ? Many early archaeologists favoured the conjuror's trick ; Nordman suggests an ingenious but unconvincing compromise. ' I imagine ' he says (p. 85), ' that the actual idea of building large stone tombs penetrated to the North, and that there the problem was first solved in the way indicated by the early dolmens.'

To my mind it is very probable that the dolmen evolved in northern Europe out of various developments of the passage-grave. All the morphological elements of the dolmen complex in the north can be derived in northern Europe from passage-grave forms—I think there can be no dispute on this point. We have already said that it is confusing to speak of the ' northern dolmen ': such a phrase conceals the variety of forms in this class. We have spoken of the four morphological elements in the dolmen complex: they are combined in northern Europe to give us four types of monuments; (1)the polygonal chamber in a round barrow ; (2) the polygonal chamber in a long barrow ; (3) the rectangular chamber in a long barrow, and (4) the rectangular chamber in a round barrow. The rectangular dolmen in a round barrow was probably evolved by a shortening of the entrance graves we have already mentioned : sites such as Sonderskov[30] and Vildsted, Flinterup,[31] (both in Söro, in Sjaelland) are probably intermediate between the entrance-graves and the short rectangular chambers or dolmens. The rectangular dolmen in a long barrow probably developed from a shortening of the closed long galleries so common in northern Europe. The round or polygonal chambers in round barrows probably developed out of ordinary passage-graves such as Sjöbol and Broholm, and the curious ' passage-dolmens ' perhaps represent intermediate stages between passage-grave and polygonal dolmen. The polygonal chamber in a long mound is a very rare and unusual form and may be due to a late fusion of some of the morphological elements in the dolmen class : in any case, some of the normal passage-graves with round or polygonal chambers are occasionally found in slightly elongated long barrows.

[30] Madsen, *op. cit.*, no. 43.

[31] ibid. no. 47.

This polygenetic theory of the origin of the northern dolmens is set forth schematically in the accompanying diagram.


Polygonal dolmens in round barrows
Rectangular dolmens in long barrows
Rectangular dolmens in round barrows
Long rectangular galleries
Entrance graves
Passage-dolmens
T-shaped passage-graves in long barrows
Undifferentiated or v-shaped passage-graves
Normal passage-graves with round or polygonal chambers in round barrows

Such a theory of the origin of the northern dolmen as I have outlined clearly implies that all the dolmens must be later than at least a large number of the passage-graves, and this is, of course, in complete opposition to existing orthodox theory which upholds that doctrine of the priority of the dolmen in the north which Montelius in 1874 first expounded on inaccurate distributional evidence.[32] Both Nordman and Sprockhoff maintain this priority, but, fortunately, I am in very good company in supporting this rankest of heresies, for Professor Forde, after discussing a number of Danish finds, wrote : ' Such finds throw doubt on the schematic view that the passage-graves are invariably later than the smaller tombs ',[33] and in his recently-published presidential address to the Prehistoric Society, Dr Mahr says, ' I think that both the scheme Montelius established for Scandinavia, and the one Bosch Gimpera still upholds for Iberia, are untenable '.[34]

This is not the place to discuss the arguments for and against the priority of the dolmen in the north, nor is it, perhaps, fair to say that in Iberia, in Brittany, in Ireland, and in southern Britain, the priority of

[32] See *Compte Rendu* of the 1874 (Stockholm) *Congrès d'anthropologie et d'archéologie préhistoriques*, 161–2.

[33] *Amer. Anth.*, 1930, XXXII, 99.

[34] *Proc. Preh. Soc.*, 1937, 340.

the dolmen has been argued to be a myth. As Estyn Evans and Miss Gaffikin say, 'the dolmen myth dies hard',[35] and I suspect it will need a great deal of exposition and argument to show that even in northern Europe the dolmen priority is probably a myth. These are the horns of our present dilemma: if the sequence of grave-goods (which is alleged to develop with the dolmen–passage grave–long gallery sequence) be correct, the dolmens must be the earliest forms of megalithic tomb in northern Europe; and we are then forced to the uncomfortable conclusion that the dolmen-complex originated out of nothing in Scandinavia—indeed we are back to the conjurer's bag of tricks. If, on the other hand, the dolmen did develop out of various passage-grave forms, as we have suggested, the grave-goods sequence cannot be correct. And in merely stating this problem I cannot refrain from wondering whether this grave-goods sequence is as correct and unshakable as is usually alleged. I have never yet seen a satisfactory explanation of the occurrence of collared flasks, funnel-necked beakers and thin-butted celts (*i.e.*, of allegedly early 'dolmenic' grave-goods), in the elongated T shaped passage-graves of northern Germany and Holland, which must, on any theory, be late in the series.

I hesitate to develop here the fascinating problems involved in the origin of the Scandinavian dolmen. I want to do no more than indicate, what neither Nordman nor Sprockhoff do, that there is a very vital problem involved in the Scandinavian dolmen, and that the accepted Montelian sequence of northern tombs is at present open to severe criticism. It is to be hoped that in the near future Professor Nordman and Dr Sprockhoff will increase our indebtedness to their researches—an indebtedness made very heavy by these present admirable surveys—by discussing in detail the manifold problems of the origin and date of the Scandinavian dolmens.

[35] *Irish Naturalists Journal*, 1935, v, no. 10, 5.

Biskupin

An Early Iron Age Village in Western Poland

by J. Kostrewski

THE village of Biskupin is situated in the northern part of Great Poland, six miles from Znin, 65 miles to the northeast of Poznań and to the southwest of Toruń, the capital of Polish Pomerania. Nowadays it is famous, not only in Poland but throughout the world, for the remarkable discoveries made in its vicinity by the Poznań University Archaeological Expedition. Excavations have been carried on for four years, and have revealed the ground plan of a prehistoric stronghold which was built on a peninsula jutting into the lake of Biskupin, on the surface of a former peat-bog, in the Early Iron Age, between 700 and 400 B.C. but abandoned in consequence of its inundation by the waters of the lake. The site was covered with a thick deposit of sand and mud, which protected the remains against atmospheric influences, while the dampness of the ground caused the preservation in excellent condition of the lower portions of the huts and the wooden defensive works, as well as the roads and breakwaters.

During the Bronze and the Early Iron Ages a great part of western and central Poland as well as eastern Germany was inhabited by an agricultural people known as the Urnfield people, of Lusatian type, and who are considered by nearly all Polish prehistorians as ancient Slavonic. Being threatened with invasion by the cist-grave and face-urn people of Pomerania, who were probably of ancient Baltic stock, they took refuge in forts constructed of wood and earth placed in inaccessible spots, for the most part on islands and peninsulas. Lusatian forts of this kind have been identified in northern Poland, *e.g.* at Komorow in the district of Szamotuly, at Czeszewo (Wagrówiec), Jankowo (Mogilno), Kruszwica (Inowroclaw) and at Wilczyn (Konin). Nothing but the necessity of defence can have induced the prehistoric inhabitants of the neighbourhood of the present Biskupin to establish themselves on the damp and peaty peninsula extending into the lake, which was both unhealthy and unsuitable for building. This peninsula,

surrounded on three sides by the lake and cut off on the land side by a broad strip of marshy ground, was further fortified, as the excavations hitherto made have indicated, by a wooden rampart (PLATE I) filled with beaten earth, which was carried round the whole site. This rampart was built three times, and each time nearer to the centre of the peninsula. Only small fragments of the earliest and northernmost have survived ; it was clearly destroyed by water (PLATE I, *e*). Later the area enclosed within ramparts was reduced and the first breakwater constructed, and within its shelter a second rampart was raised (PLATE I, *c*). When this latter was partially destroyed by fire, it was replaced throughout a considerable length by a third, rather narrower, wooden rampart 8 ft. wide, running parallel inside and south of it (*b*), which however is not continuous, but is interrupted by a row of huts, because the old rampart was well preserved at this point. It was constructed of beams, overlapping and placed crosswise, chamfered at the intersections for security, and supported by piles driven in vertically on the inner side. The result was two or three rows of caisson-like chests, which were then filled with stamped earth. Considerable remains of the middle and latest rampart, in places as much as three feet high, have been laid bare in the north and east of the peninsula, while on the south the rest of the rampart, which once prevented access on the land side, can even now be clearly identified.

Along the middle rampart a row of piles were driven in obliquely to protect it against the undermining action of the waves. Further towards the lake is a double row of similar piles, constituting the oldest actual breakwater, and beyond it again another, consisting of seven or eight rows of great piles driven obliquely into the edge of the lake and strengthened by the imposition of horizontal beams (PLATE I, *d*). The innermost of these breakwaters is considerably lower—perhaps $2\frac{1}{2}$ feet—than the second. Obviously then the original low breakwater had to be replaced by a new one, higher and a little further towards the lake, owing to the rise in the water-level. Access to the rampart was facilitated by a circular street running along the inner side of it (PLATES I, *a*, and II), and three great piles, driven into the edge of this road at a point where a sharp turn rendered it difficult to build a house, seem to have supported a kind of gangway leading on to the top. Within the latest rampart were found heaps of stones, apparently laid there to be hurled against an advancing enemy.

The area thus fortified was occupied by a populous settlement, composed of from 80 to 100 huts, built on a layer of birch fascines

CIRCULAR ROAD, BISKUPIN, POLAND (*see* p. 312)

A, Circular road. B, Latest rampart. C, Middle rampart. D, Breakwaters. E, Foundations of the earliest rampart. F, Dyke built by the Expedition

PLATES I-III *ph.* W. Koczka

facing p. 312

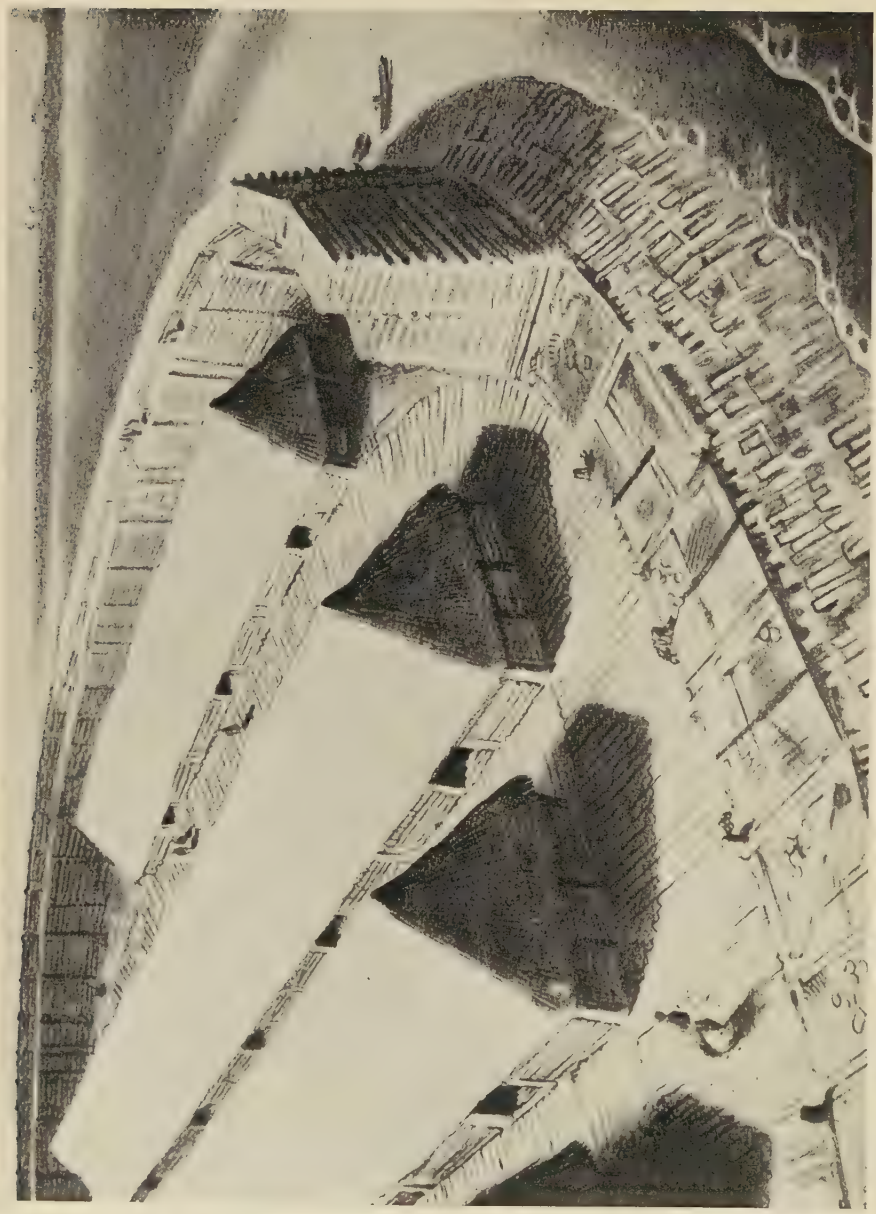
PLATE II

NORTHERN PART OF THE CIRCULAR ROAD, BISKUPIN
Centre, left : entrance to a hut. Top, left : ramparts

VERTICAL VIEW OF TWO HUTS COMPRISING THREE ROOMS, BISKUPIN

Top : middle rampart. Below : corduroy road

PLATE IV



RECONSTRUCTION OF THE NORTHERN PART OF THE VILLAGE OF BISKUPIN
From a drawing by W. Boratynski

resting on the surface of the peat-bog. The ground plan was laid out in a masterly fashion which would have done no discredit to a modern town-planner. In the area so far excavated eight perfectly parallel roads or lanes have been laid bare, running from west to east and connected by an outer one, running round in a half circle within the rampart. These lanes were of corduroy construction, that is to say, made of thick oak logs. On either side of each street were rows of wooden huts standing end to end and actually touching. Indeed there was frequently only a single common end-wall. The huts were about ten yards square, and their doors, sometimes eight feet across, were always on the south side, evidently serving to let in light. These huts usually contained two rooms ; a main one with the hearth and a vestibule, six or eight feet broad, which took up the whole front. Sometimes, the main space was divided into two compartments ; one, smaller than the other, having perhaps served for the accommodation of cattle or as a sleeping-room (PLATE III). To the right of the entrance, in the main room, was the round (rarely square) hearth, most frequently made of stones and as much as six feet in diameter, but occasionally of nothing but clay. The floors were composed of wooden beams resting on fascines of crossed or sometimes interwoven birch sticks and branches, and were covered with a layer of clay to diminish the danger of fire. The stone hearths themselves were also overlaid with clay, which preserved them from being blackened or split by the heat.

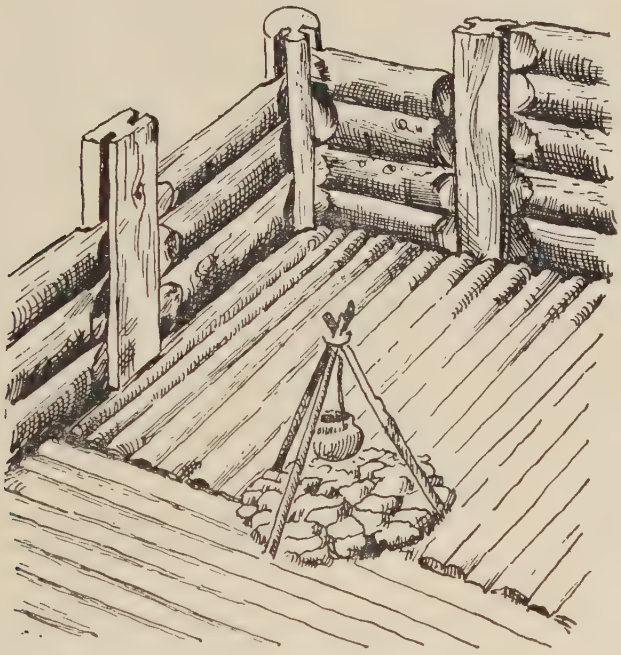
All the houses are built on the same plan (see FIGURE, p. 315). At the corners are placed round posts of pine, in each of which are cut two vertical grooves, running the whole length of the post, an angle of ninety degrees separating the one from the other. Between these corner-posts are flat ones, usually of oak, with two vertical grooves. Into these grooves are fitted, one upon another, beams or rough-hewn planks with flattened ends. In some of the better preserved huts as many as three still remain in position. The door-posts were also grooved on the outsides, their door sides being smooth. At the bottom all these posts were supported by cross pieces running through them and projecting on either side, to prevent them sinking in the peat-bog. This method of building is still employed in various parts of Poland, and even at Biskupin itself there is a peasant's cottage constructed on exactly the same principle, so it may be that an ancient building tradition has been preserved for 2500 years. As the upper parts of the huts have been destroyed, it would have been impossible to estimate the height had not two or three posts from destroyed ones

been preserved by being used a second time in the floors or the lower parts of the walls. Some of these are 13 feet long, so that, allowing for 3 feet in the bog, the height of the walls was probably 10 feet.

A number of observations go to show that the huts excavated at Biskupin are not all of one date. Huts were frequently destroyed by fire, and new ones built on the same site, in which case remains of the old ones were so far as possible incorporated in the new. In some, therefore, we find two door-posts side by side, or two corner posts, or flat wall-beams from two separate huts that were built in succession on the same site; indeed there are occasionally remains of three huts built one after the other on the same site at different periods. Two floors and two hearths, one above the other, are found comparatively frequently, separated by a layer of soil twelve to twenty inches thick, and there are a few examples, especially in the lower or northerly portion of the area, of two or three levels in a street. In either case the lower level, alike in hut and street, is solidly constructed of thick oak trunks while the upper is carelessly and hastily composed of thin birch poles. These later road and floor surfaces are evidently to be connected with some great flood which inundated the settlement and compelled the inhabitants to raise its level. When this settlement was founded the level of the lake must have been considerably lower than it is today, even though it was markedly lowered a few years ago by the deepening of the Gasawka stream, which runs through it. Evidence of this is found in the fact that the hearths of many huts which have been excavated are now below the surface of the lake. During the course of the settlement's existence, however, there must have been a marked increase in the volume of water in the lake, due not only to local causes such as the silting of the bed of the Gasawka, but also to a general increase of rainfall; for the researches of palaeobotanists show that in the Early Iron Age the climate of Poland, in common with that of a considerable part of Europe, was steadily becoming damper and colder. Our excavations confirm this for the northern part of Poland. The influx of water due to the increased rainfall seems finally to have become so great that the inhabitants abandoned the flooded site. But that which was a catastrophe for them has turned out a blessing for archaeology. For although everything which was above water level has been completely destroyed, the foundations and lower parts of the huts and the other constructions, covered with water and earth, have been preserved almost as they were left 2300 years ago.

This protective layer of sand and mud has also preserved a large

number of tools, ornaments and weapons used by the ancient inhabitants, and even a few pieces of furniture, such as the lower part of a family plank-bed discovered in one of the huts. Pottery especially is very well represented. Besides coarse ware there are some very beautiful, richly ornamented specimens : *e.g.* incised vessels encrusted with white material or painted with red ochre, lumps of which have been found



METHOD OF CONSTRUCTION OF HUTS AT BISKUPIN

on the site. Two vessels are decorated with very conventional figure-drawings : a few riders, and a hunting scene with several horsemen and two stags. There are numerous bronze objects : 40 pins, some of them swan-necked, a few bracelets and small rings, needles, fish-hooks, a razor, tweezers, double cone-shaped beads, buttons, and many other objects. Iron socketed celts, sickles, awls (one of them still in its bone handle), needles, a bridle-bit and pins have been found ; as well as horn and bone awls, mattocks, large hammers with square holes for the handles, socketed spear-heads, tanged arrow-heads with

barbs, smoothing-tools, etc. Wooden implements include swirling-sticks, pestles, two kneading-troughs, pine-bark floats for fishing-nets. The most interesting wooden objects are a primitive plough, a solid wagon wheel of Mercurago type, made of a single block of wood, with a square hole for the axle and two semicircular openings cut out on either side, strengthened by two strips let into the wood across the grain, an oak axle from a cart and three wooden gratings, one of them lined with wicker, which were doubtless used as hut doors. Other finds include blue glass beads, most probably imported from Egypt, various stone implements such as pentagonal celts, circular and triangular tools the purpose of which is unknown, but which may have been used to smooth earthenware vessels or to prepare hides, querns and grind-stones, clay implements for spinning and weaving, whorls and loom-weights, and clay toys. The numerous carbonized grains of corn, wheat, barley, millet, pea and vetch which have been found, and fibres of flax, point to the agricultural character of the population. The bones of domestic animals found show the importance attached to cattle breeding. Wild creatures are represented mostly by the stag and the hare, more rarely by the bear, and occasionally by the wild boar, the wolf, the fox, the beaver, the wild duck and the hawk. Fish-bones occur but rarely. Other occupations of the people are clearly illustrated by the discovery of clay moulds for casting necklaces, pins and the like. They are all of the so-called ' cire-perdue ' type, that is to say the clay was plastered round the wax model, and after casting the mould had to be broken in order to get at the object. Such models have not hitherto been found elsewhere in Poland.

The excavations at Biskupin have given us for the first time a conception of the appearance of a complete prehistoric Polish settlement, and have thrown new light on the material and social culture of the Urnfield people of the Lusatian culture. Only a well-disciplined body of men under energetic leadership could establish such a settlement and build it according to a unified and well thought-out plan. It has sometimes been supposed that the Lusatian culture disappeared as the result of over-refinement and consequent decadence; but the discoveries at Biskupin give us a very different picture. The frequent occurrence of horn and bone implements on a site dating from a period of the highest development of the Lusatian culture, when bronze was beginning to be superseded by iron, offers a perfect analogy with the frequent use of horn and bone implements by the early historic Slavs—between A.D. 600 and 1000—who also raised similar

strongholds and showed a similar tendency to settle on low-lying ground exposed to inundation. The most striking fact is that huts of identical construction are in use today over the whole area once occupied by the Lusatian culture, especially in Poland. There are some, indeed, quite close to our site, at Godawy, on the east bank of the lake of Biskupin and at Biskupin itself. A similar hut, dating from the late Middle Ages, was excavated in 1935 at Kcynia in the district of Szubin, and another, dating from the 17th or 18th century, at Ostrowo near Gebice in the district of Mogilno ; and it may be therefore supposed that the type has existed in Poland continuously from the Early Iron Age down to the present day ; if this is true it supplies one more proof of the Slavonic origin of Lusatian culture.

The complete examination of Biskupin will take several years, for the site covers over six acres, of which only one-third has so far been excavated. The best preserved portion, it is hoped, will be properly protected and kept as an object lesson for future generations. The archaeological expedition lives on the spot in a camp of its own, containing a workshop, a dark room for photography, rooms for drawing, etc. The whole site laid bare is mapped on a scale of 1:10 and several hundred photographs have been taken from ladders and from a balloon. The expedition has reconstructed two huts on the original plan, one of which serves as a museum, where the most interesting finds are exhibited.

Folk Culture

by Iorwerth C. Peate

IN these islands we have been tardy in recognizing Folk Culture as an independent science. As the editor of Folkliv,* Professor Sigurd Erixon, states in his Foreword : ' It has long been leading a more or less dependent existence as an ambulating guest of certain related branches of science, which, thanks to the force of circumstances, were consolidated earlier. Generally it has been awarded a certain amount of space in archaeological, historical, artistic, geographical or philological publications. . . . The ethnologists of present times certainly recall that sponsorship and hospitableness with great gratitude. It is to be regretted however that there are far too many instances of ethnology not having attained such a development nor having become such a factor of education as it would appear entitled to '. This is regrettably true of the British Isles. As far as I am aware, there is no learned journal published here dealing exclusively with the problems of Folk Culture : with one exception, there is no department of Folk Culture in any of our national museums, nor is there a Chair of Folk Culture in any British university. The general rule in most museums is to make Folk Culture an appendix to archaeology and to exhibit miscellaneous collections of folk material under the unhappy and unscientific title of ' Bygones '. The one exception to which I have referred is the National Museum of Wales, which now has a Department of Folk Culture and Industries enjoying the same status as the other museum departments. The history of its establishment is pertinent to our present discussion. Since the foundation of the National Museum of Wales in 1907 Welsh folk material was collected under the enlightened sponsorship of its successive directors, the late Dr W. Evans Hoyle, Dr Mortimer Wheeler, and Dr (now Sir) Cyril Fox. This material was housed in the Department of Archaeology and first exhibited in a Gallery separate from the archaeological collections by

* Folkliv : review of Nordic and European Ethnology, vol. 1, 1937 : four parts. Edited by Sigurd Erixon. Bokförlags Aktiebolaget Thule, Stockholm.

Sir Cyril Fox (then Keeper of Archaeology) in 1926. In 1932 a sub-department of Folk Culture was instituted within the Department of Archaeology and in 1936 a separate Department formed. In the same year the Keeper of the Department was appointed Lecturer in Folk Culture in two of the constituent colleges of the University of Wales. Had these welcome developments taken place in the first instead of the third decade of the century, folk studies would have been greatly advanced. The period of the Great War and the years following saw a transformation in the life of the Welsh countryside which has made the work of the folk-culturist exceedingly difficult : were it not for the early enthusiasm of Mr T. H. Thomas, Mr T. W. Proger and Mr John Ward and their collaborators, for their despised collection of ' Bygones ', that work, difficult as it is, would be well-nigh impossible. The moral is : let England and Scotland follow the example of Wales without further loss of time and opportunity, and give to the science of Folk Culture (well-served as it is in some regional English museums) national recognition. But museum recognition is not all. There are university chairs of Folk Culture in most north-European centres : Uppsala has its Gustavus Adolphus Academy for folk-culture research (*folklivsforskning*) which is responsible for the Journal under review. Indeed the northern countries have long recognized the fact that they only can speak with authority concerning their own cultural life. They do so through their universities, their museums and their open-air museums.

But what is Folk Culture ? Professor Erixon devotes twenty pages of this volume to answer the question in a paper (in English) entitled ' Regional European Ethnology : main principles and aims with special reference to Nordic ethnology '. Stated briefly, the student of Folk Culture is concerned with Man himself, ' his mental or bodily functions and works ' excluding animal functions and scientific research regarding the human body, which are the province of the physiologist, the medical scientist and the physical anthropologist. ' What is sought is objective knowledge of the material ' associated with man's everyday life, ' and the actual conditions and functions attached to it ' together with details of its origins, sources and distributions. In Wales, for instance, we are concerned with the culture of the Welsh people—in its domestic, social and spiritual aspects.

It is however the term ' folk ' which causes most confusion. Swedish, in common with the other Nordic languages, has since ancient times an apt word for this, namely *allmoge*, which originally applied to

all folk, the whole people, but ultimately obtained the special meaning of country folk and manual workers. Welsh too has the term *gwerin*, signifying the people in general but also having the special meaning of the Swedish word. English is more unfortunate. The word *folk*, as Fowler tells us, ' has passed out of the language of the ordinary educated person ' and has been readmitted (imitated from the German) in such learned compounds as folk song, folk lore and folk culture. We speak however of *folk* culture rather than of *human* culture, as Erixon points out, ' due to the conviction that it is only by the study of human groups or by comparison between the individual and the group that this science can reach its goal '. The comprehensive significance of the term *folk* as contrasted with its late specialized meaning must therefore not be underestimated. One cannot deprecate too strongly the unscientific tendency—to use only a mild expression—of some writers to consider folk culture only as a study of the *vulgus in populo*, the ' lower stratum ', the ' natives '—a term I have heard applied by an educated man to the Welsh country-folk in the same sense that he would speak of cannibals. Erixon, in this paper, disposes of the belief held by ' superior ' enquirers that this ' lower stratum ' compares unfavourably with the ' upper stratum '. We are familiar in these islands with the view that the peasantry is ' the party always receiving ', the *vulgus in populo* always indebted to its social superiors. It is the view which for instance has made possible some of the absurd statements concerning the Norman keep as the *fons et origo* of our houses. Erixon is inclined—and the present writer agrees wholeheartedly with him—to abandon this ' upper ' and ' lower ' terminology and to speak of the lower stratum as ' a mother stratum characterized by associative reasoning, with a daughter stratum [the " upper "] bearing the stamp of a more conscious intellectual life [and] an intermediate stratum as well which acts as a link and has its foundation in civic affairs and business circles '. The upper- and lower-stratum psychology, states Erixon, is pure fiction. ' The creative forces belong to trade groups which are not usually to be found among the uppermost stratum of society, which on the contrary is of pronounced consumer type '.

Folk Culture, therefore, seeks to ' interpret and understand the community behaviour of human beings ' in our own countries. One of the tragedies of our time is the fact that so many workers in the field of ethnology have ' counted only extra-European folk as objects of ethnological research '. The result has been to fill our anthropological journals with papers on the ' savage races '—in particular their

sex life, a subject which seems to attract the curiosity of so many anthropologists. It has been argued that our 'outposts of Empire' are peopled by 'unhistoric' folk whose history must be written before it is too late. The truth is, of course, that European culture is quite as unhistoric: 'Europe is just as little systematically investigated or completely known. Historians often only get to the outer contours or penetrate certain special aspects. The only solution is to go to the living human beings themselves and let them and their conditions speak'.

The necessity of limitation, as Erixon points out, has led to these investigations having been directed hitherto mainly to the rural populations—a course justified by their historical importance, this being itself a result of their greater immobility and primitiveness and also the rapid transformation which modern conditions are effecting in the countryside. But Folk Culture must ultimately include the study of every class and element in the human community. The folk-culturist 'must take into consideration everything that possesses or has played a noteworthy role in community life or the habits of living'.

Tradition is the factor which maintains the link between those habits in present and past times. An important task, therefore, is to analyse 'the life and activity of tradition as the shaper and maintainer of the social system'. A civilization endures—that is the task of tradition—but it is not immutable and Folk Culture has to examine and sift those changes due to transmissions from other groups, to loans from other culture circles and to innovations of an individual nature.

How, therefore, should the folk-culturist work? He proceeds from the externals inwards. He deals with the material manifestations of culture but does not overlook the spiritual. The working of the folk mind expressed through lore, custom, religious institutions, etc., is an integral part of the subject. 'The products of man's physical actions are the expressions of physiological and psychic functions in conjunction'. And so the student of, let us say, Welsh culture is concerned both with the Welsh expression of a European material culture, supernational in its bases, and with the spiritual aspect of culture, national or regional in essence, exemplified by language and other expressions of the mind and spirit.

I have dealt at some length with Professor Erixon's paper since the general principles of Folk Culture need elucidation at the present time. This volume, however, includes several papers which throw light on many aspects of the subject. It is gratifying to record that FOLKLIV has adopted German and English as its media of expression, and all

papers are printed in one or other of those languages. This is useful since FOLKLIV is intended to serve as a Journal of Folk Culture for the whole of north-western Europe. It is indeed for folk culture what ANTIQUITY is for archaeology and the excellence of its production can only be compared with that of ANTIQUITY. The full-page plates deserve special commendation.

Among the English papers may be mentioned ' The North-European Technique of Corner Timbering ', ' Some primitive constructions and types of lay-out, with their relation to European building practice ' (both by the Editor), ' The Ancient Settlements in Finnmark, Norway ' (by Halvor Vreim) and ' Notes on the Irish House ' (by Dr Åke Campbell, Uppsala, to whom folk-culture studies in Eire owe so much). Erixon's study of primitive constructions is an invaluable contribution to the study of house-types and building technique. (I have one small criticism : figure 18, a farmhouse near Strata Florida is printed as ' after Addy ' whereas it first appeared in *Archaeologia Cambrensis*.)

The papers in German include a discussion of the origin of the Lapps by Wiklund, the antiquity and origin of the north-Swedish corn drying screens by Ragnar Jirlow and a report on the cultural history of camouflage-methods of hunting in Sweden by Lagercrantz. In addition there are short notes and book-reviews. In the past ANTIQUITY has given the hospitality of its pages to several papers on houses, transport and kindred subjects which are outside the field of archaeology proper. We welcome the publication of FOLKLIV as a companion to ANTIQUITY. Both are indispensable to the student of anthropology in its broadest sense and it is to be hoped that FOLKLIV will achieve for folk culture what ANTIQUITY has already accomplished with such distinction for archaeological studies.

The Hercules Myth—beginnings and ends

by Stuart Piggott

THE simple, good-hearted strong man is a character perennially popular, and at times has become almost a national ideal. We sophisticates of today do not so obviously deify our expression of the desirable qualities as did our forefathers ; but we can at least appreciate the mixture of endearment and reverence with which the heroic demigod who appears as the Herakles or Hercules of classical myth was regarded. The combination of the rather likable human failings of an enormous appetite and a naif boastfulness with the godlike gifts of superhuman strength and fortitude in adversity produced an eminently credible deity, someone to whom alike the timorous maiden might pray for protection, the bluff soldier for understanding support in a punitive raid—in fact a combined apotheosis of Tarzan and of Bulldog Drummond. Such is the Hercules we see in the classical pantheon, Hercules at the height of his glory. But, as Mr De la Mare has said, it is the edges of things that are the most interesting. What of the edges of the Hercules myth ? Where and when did it first crystallize out from the cloudy mixture of primitive man's thoughts, and what forms did it take after Christianity had driven away the old gods to a hole-and-corner existence in folklore and old wives' tales ?

The origin of Hercules has recently been studied by Miss Levy[1] in the light of certain scenes depicted on cylinder seals from Tell Asmar. The best of these (PLATE I) is Akkadian, of *c.* 2500 B.C., and in it we see a hero attacking a seven-headed monster, four of whose heads hang limp and wounded while the other three rear menacingly and thrust out forked tongues. Another impression from Tell Asmar shows similar scenes, with an adversary with five heads, of which two have been severed, and finally on another seal the same god-hero is standing with a group of vegetation-deities, and holds lion-skin, club and bow.

> ' Old stories tell, how Hercules
> A dragon slew at Lerna
> With seven heads and fourteen eyes '—

This must be the oldest story of them all.

[1] G. Rachel Levy, ' The Oriental Origin of Hercules ', *Journ. Hellenic Studies*, 1934, LIV, 40–53.

Frankfort considers that the representations are of ' events chosen from the cult of the local God of Vegetation ' whose temple was excavated at Tell Asmar in 1932–33, when evidence was found suggesting a deity who combined solar and chthonic elements with the attributes of fertility inevitable to a vegetation-god. These same elements Miss Levy demonstrates to have been present in the classical Herakles ; his human attributes (*e.g.* the labours) seem to date from pre-Hellenic times, while later he appears as an ancestor of humans in the pedigrees of the Dorians and the Lydian kings. She would see evidence of his fertility associations in the legend of his marriage with the fifty daughters of Thestios, equating this with the *ιέρος γαμος* represented on a plaque from the Tell Asmar temple, and quotes the unequivocal evidence of the Orphic Texts in this regard.

Most important however is the story of his death on a burning pyre on Mount Oeta, for this immediately suggests comparison with Melkart of Tyre and, most significant, Sandas or Sandan of Cilicia, who appears on the coins of that city interchangeable with Herakles as the tutelary deity, while various late ancient writers equate the one with the other, especially Berosus with his *Σαινδην δε τὸν Ηρακλέα*. This identification of Herakles with Sandas is of some importance in tracing the movement of the idea of the Herakles-myth from Sumer to Greece ; for in the precise geographical region to which we might most hopefully turn, Asia Minor, there occurs, at Boghaz-keui, a bilingual Luvian-Hittite text in which the ideogram for Marduk is translated as Sandas. Following Götze, Miss Levy would associate the Luvians (having Sandas as their chief deity) with the makers of *Urfirnis* ware and the users of names in *–νθ* and *–σσ* roots, equating them in Asia Minor with the Troy-Yortan folk and names in -nd and -ss.

We cannot here trace the Herakles-myth in other regions, but Samson immediately comes to our mind, as the strong but simple hero obviously cast in the Herculean mould, and Virolleaud[2] has drawn attention to the strong hint of a Hydra-myth in the reference in Psalm 74, 13–14—' Thou didst divide the sea by thy strength ; thou brakest the heads of the dragons in the waters. Thou brakest the heads of leviathan in pieces, and gavest him to be meat to the people inhabiting the wilderness '. The dragon-slayer is eternally a popular hero, from the Spearer of Apep to More of More-hall.

I shall now turn to another edge of the Hercules story—an edge

[2] *Syria*, 1931, XII, 356–7.

geographical rather than chronological, for I propose glancing at certain points in connexion with the worship of the god, not in Rome, but in the remote province of Britain. So far as can be judged from the evidence of sculptures and inscriptions, Hercules as worshipped in Gaul differed in no way from the classical model, even if he did sometimes replace a native hero-god of similar attributes, save only in the mysterious Hercules Ogmios, for whose existence Lucian is the sole authority. Ogmios is a feeble decrepit old man, wrinkled and bald—and no strong silent monster-slayer but a master of sweet speech and subtle words, depicted, says Lucian, with his listeners chained by the ears to his tongue.[3] How he comes to be associated with Hercules must remain a mystery.

In Britain the worship of Hercules (save for one particular cult to be mentioned below) appears to have played, generally speaking, no greater and no smaller part than that of the other deities of the Roman pantheon who were either accepted for what they were or asssimilated to native godlings of similar attributes. Representations of Hercules and the Hydra occur—on altars, as that from Whitley Castle (PLATES II–III) or in more entertaining form, on the sherd of Castor ware from Welney illustrated in ANTIQUITY, 1936, X, 94 and pl. III. Small crude bronze figures also occur, and a group of these has recently been studied by Dr Fritz Heichelheim,[4] who would see in them evidence of the cult of the Emperor Commodus as Hercules Romanus. The circumstances of the establishment of this cult may be here briefly reviewed in parenthesis. As I have said, the popularity of Hercules was as a domestic god with very human attributes, and as such he plays an important part in the religion of the Roman emperors, and from time to time the more megalomaniac had sought to establish a Hercules cult and to identify themselves with the god. Caligula and Nero both made this attempt, the latter with some success ; but the Antonines contented themselves with a more philosophical outlook, in which they became the protegés of Hercules, each personifying in a vague manner some suitable aspect chosen from the god's accommodatingly large range of attributes. Commodus, however, adopted not only the whole Antonine tradition, but, reverting to the aspirations of the earlier emperors,

[3] For the Gaulish Hercules see J. Toutain, *Les Cultes paiëns dans l'Empire Romain*, III, ch. iii.

[4] Fritz M. Heichelheim, 'On some unpublished Roman bronze statuettes . . .'. *Camb. Ant. Soc. Procs.*, 1937, XXXVII, 52–67.

at the end of 191 declared himself as an incarnation of Hercules and a fit object of adoration.[5]

In England the most definite and important evidence of the Hercules-Commodus cult is the well-known bronze sceptre in the form of a club surmounted by a bust of Commodus, from the Willingham Fen hoard ;[6] and arguing (I think rather too confidently) from this, and from the distribution of the Hercules statuettes in East Anglia, Dr Heichelheim identifies three possible centres for the practice of the cult in that region, the most important being in the neighbourhood of Cambridge. It is in connexion with this last area that he puts forward an interesting suggestion that I propose developing at some length.

The suggestion is with regard to the Gogmagog Hills that lie to the south of Cambridge, crowned by the hill-fort of Wandlebury and the 18th century mansion of the Godolphins, the making of the grounds and outbuildings of which largely destroyed the earthwork. Now, while the gigantesque name of the hill is not recorded before 1574,[7] since the early 13th century at least it has been associated with the legend of a giant, challenged in the dark by a knight who, victorious, carries off the giant's horse which later (as is the way with nightmares) vanishes.[8] Here then we may have a folk-memory of a hill sanctuary of Hercules, and Dr Heichelheim calls in as a witness the figure of a giant cut on the slope of Wandlebury's rampart, which he considers ancient. Alas ! this ' high and mighty portraiture of a giant ', as was pointed out in these pages last year,[9] was cut by the ' schollars of Cambridge ' some time before 1640, and cannot itself be cited as evidence. Nevertheless, as we have seen, there was an earlier giant legend about the hill, and the sportive undergraduates were in effect giving pictorial reality to an oral tradition which might well enshrine a dim recollection of Roman times.

To the minds of many readers there must by now have occurred the same thought—what of the Giant of Cerne ? Can he be a representation of what Stukeley called ' our high admiral Hercules ' ? (Stukeley had no doubt but that he was). There seems good reason for thinking that such is almost certainly the case.

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[5] Cf. M. V. Taylor and M. Rostovtseff, ' Commodus-Hercules in Britain ', *Journ. Roman Studies*, 1923, XIII, 91–109.

[6] Fox, *Arch. of Cambridge Region*, 214–15, with refs. ; *Ant. Journ.*, 1926, VI, 178.

[7] *Camb. Ant. Soc. Procs.*, 1911, XV, 53–62.

[8] The story is recorded by Gervase of Tilbury in his *Otia Imperialia* of *c.* 1211.

[9] ANTIQUITY, 1937, XI, 104.

Above the village of Cerne Abbas, remote in a lonely valley of the Dorset hills, there is, carved through the turf to the white chalk rock, a giant whose portraiture is high and mighty indeed, standing as he does 180 feet high from top to toe, and brandishing a knotty club which adds 35 feet to the total representation. His left arm is held out and is now empty, but a suspicious irregularity and slight mound below his hand suggests a pendant object of indeterminate shape. He is drawn with crude naturalism, and is markedly phallic.

To the classical 18th century there seemed little doubt that he was Hercules, but to a more romantic 19th, Baal Durotrigensis seemed a more appropriate title, while his phallic attributes caused dark hints to be thrown out of secret rites and nameless orgies. Sir Flinders Petrie surveyed the Giant accurately in 1925,[10] but unfortunately essayed a Bronze Age date for the figure on evidence that was shown to be entirely groundless by Mr Crawford in these pages.[11] Since then no serious contribution to the study of the figure has been made.

As with the other hill-figures, we are left with stylistic grounds as our dating criteria for the Giant, save for a glimmer of light from a curious philological source which will be discussed below. The most obvious point is the naturalism with which the figure is treated, in which it stands in striking contrast to the Uffington White Horse, which seems to display the same art-tradition as the non-representional ' Late Celtic' style. At Cerne however we have the clumsily naturalistic yet lifeless convention so characteristic of Romano-British art, and, equally characteristically, the inanimate club, with its bold wavy outline, is the most successful and lively part of the picture. We have a representation of a great hero, with the attributes of club (and perhaps the lion-skin) who is also conspicuous in his display of virility and generative powers. If the instance of Wandlebury may be cited (and I would do so with all reserve) we have a possible precedent for a country hill-sanctuary of Hercules, and perhaps one due to the revival of the cult by Commodus. I feel it almost inevitable that the Giant of Cerne must be Romano-British, and that it may possibly date from the years immediately following 191.

Before leaving the Cerne Giant, I would draw attention to the curious little earthwork on the hilltop immediately above the Giant, locally known as the Frying-Pan. Mr Crawford has compared it to a type of prehistoric earthwork enclosure common to the downland and

[10] *The Hill Figures of England* (Royal Anthrop. Inst. Occ. Papers no. 7).

[11] ANTIQUITY, 1929, III, 277–82.

probably mainly of Late Bronze Age or Early Iron Age date ; but it has certain curious individual features, the most noticeable being that its interior is carefully and deliberately levelled on the hill-slope, in such a way that there is a considerable drop from the rampart to the inner area on the uphill side, but on the downhill edge it is virtually ' lynchetted ' on the slope. (The inner bank, made in connexion with 19th century tree-planting, confuses this feature and must be ignored). There seems at least a possibility that we may regard this enclosure (in which until the last century the maypole was annually set up), as that of a primitive temple of the cult: the native version of the hill-top temples of Chanctonbury, Maiden Castle or Lydney. Excavation alone can help us further.

It would indeed be remarkable if so dominant a mythological figure as Hercules, and one so peculiarly a god of the common people, should leave no trace on the folklore and traditions of post-classical Europe. In point of fact we can trace the Hercules myth along several curious by-paths in literature and popular legend to the present day. The purely literary and the popular threads of the story are at first interwoven, but by the end of the Middle Ages had separated to a great extent. We may best start by considering the purely literary aspect.

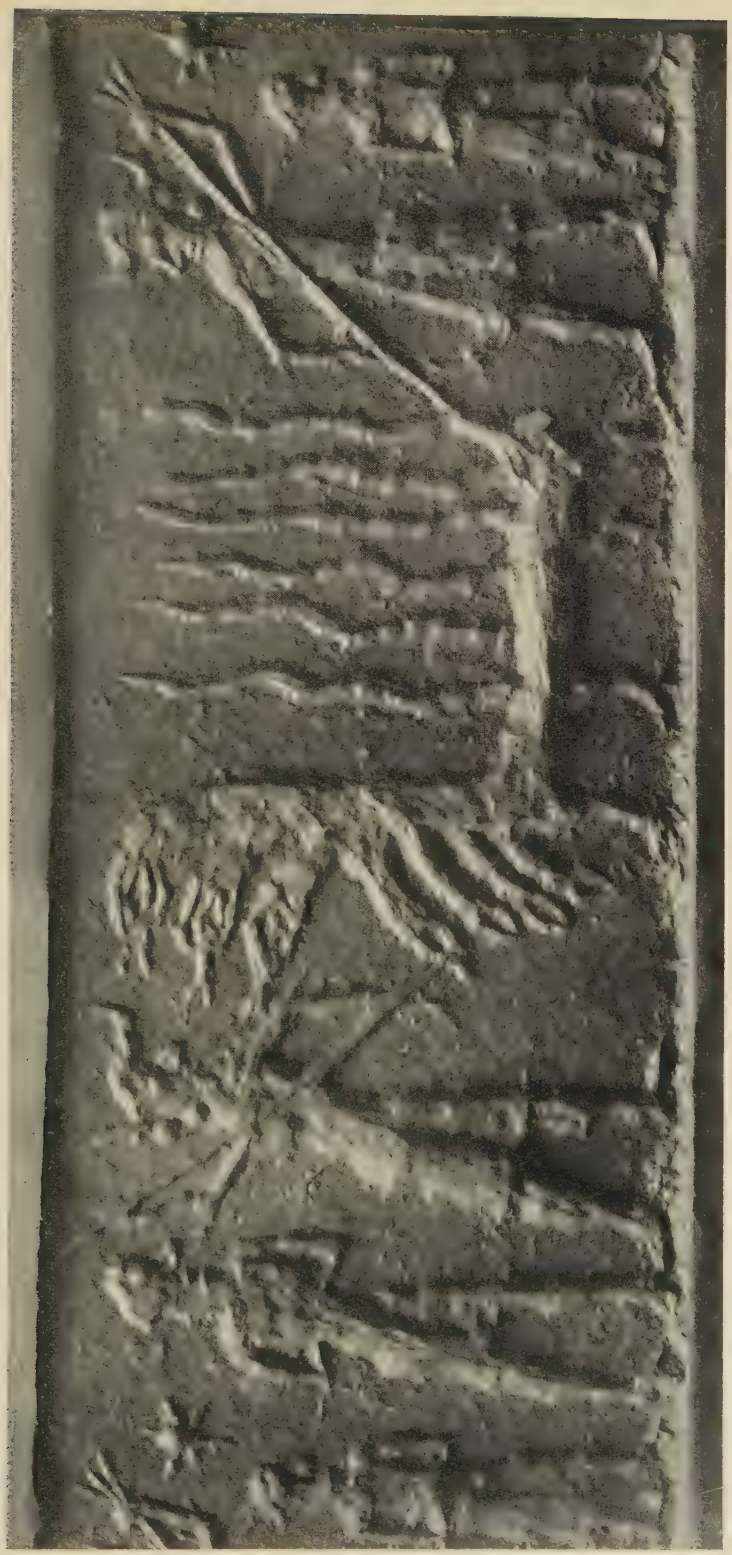
In classical mime and drama up until at least the 6th century Hercules was a stock comic figure,[12] his gluttony and boorishness forming an easy target for simple humour ; and when in the 16th century the Italian Comedia del Arte was becoming a formalized stage show, among the characters ultimately derived from classical sources we can recognize Hercules, for he, slim and etherealized, his club transformed to a lath, is none other than Arlechino—the Harlequin of our 19th century Transformation Scene and Pantomime.[13] Philologically his name is a metathesis from a diminutive Herculinus=Herlechinus= Harlequinus, and indeed it appears that there was no doubt of his identity in the minds of the intelligentsia of the 16th century, for in the course of a singularly undignified theological controversy of 1592 one writer, descending to the personalities that seem to have come as easily to learned disputants of that time as to fourth-form schoolboys or Members of Parliament today, expressed his opinion that his opponent's intelligence was roughly on a level with that of the clown who played Hercules or Harlequin in a farce—' ut luderet personam Herculis vel Harlequini in comoedia '.[14]

[12] Cf. Allardyce Nicoll, *Masks, Mimes and Miracles* (1931), 269

[13] Otto Driesen, *Der Ursprung des Harlekin* (1904).

[14] Driesen, p. 169.

PLATE I



IMPRESSION FROM AN AKKADIAN CYLINDER-SEAL (c. 2500 B.C.) SHOWING A HERO SLAYING A SEVEN-HEADED MONSTER. FROM TELL ASMAR (*see* p. 323)
(*After* Frankfort, *Iraq Excavations of the Oriental Institute of Chicago*, 1932–33, FIG. 43)

facing p. 328

PLATE II

HERCULES AND THE HYDRA ON AN ALTAR FROM WHITLEY CASTLE (*see* p. 325)
ph. R. G. Collingwood

PLATE III

HERCULES AND THE HYDRA ON AN ALTAR FROM WHITLEY CASTLE (*see* p. 325)
ph. R. G. Collingwood

THE WILD MAN ATTACKED BY A KNIGHT (*see* p. 331)
English enamel, mid-XIV cent. (Victoria and Albert Museum)

Nimble, elusive, fantastic, Harlequin delighted and amused the Renaissance courtiers, but in European folk-legend Herlechinus had played a far grimmer and more terrifying part since at least the 11th century. It seems that the attributes of Hercules that persisted in the minds of the people were not the heroic dragon-slayings (usurped perhaps by St. George), but his character of god of the underworld—those chthonic features which Miss Levy showed to be of importance in his earliest manifestations in the Orient. He retains his club in his capacity of a god of the Old People (Dr Mahr would say the Mesolithic folk !) and he is the leader of the underworld, the huntsman of the demon hunt.[15]

In the year 1091, Ordericus Vitalis recounts, a priest Gualchelmus of St. Aubin-de-Bonneval near Lisieux, set off one night to visit the sick at the far end of his parish, and on his way hears a sudden noise and is about to run away when he is commanded to stay by a spectral club-bearing giant leading a troup of ghosts—' Verum quidam enormis staturae, ferens ingentem maxucam, presbyterium properantem praevenit, et super caput ejus levato vecte dixit : Sta, nec grediaris ultra '. The story continues at some length, recounting how Gualchelmus recognized deceased parishioners among the ghostly horde, and how he tried to steal a spectre-horse (which vanished, as at Wandlebury) ; but of greatest importance is his recognition of what he saw as the followers of Herlechinus—' Haec sine dubio familia Herlechini est ' he thinks to himself.[16]

Through the literature of the Middle Ages we have recurrent glimpses of this same belief, with its main character in variant but easily recognized forms of the Hercules-name. He leads an army—the ' milites Herlewini ' of Pierre de Blois in the 12th century, and the army takes his name—' phalanges noctivagae quas Herlethingi dicebant ' as Walter Map writes in the same century, confusing the Hunter with his Hunt, Herle with his Kin. By the 13th and 14th centuries, ' la mesnie Hielekin ' was common form in French for a devilish rout, and Hellequin or Hernequin was a general term for a devil, although side-by-side there persists through to the 16th century the original idea of the demon hunt.[17]

[15] This aspect has been studied by Gaston Raynaud, *La Mesnie Hellequin*, in *Études romanes dédiées á Pierre Paris* (1891).

[16] Ordericus Vitalis, *Historia Ecclesiastica*, ed. le Provost (1845), III, bk. viii, esp. pp. 368, 371.

[17] For references to these quotations see Raynaud, *passim*.

At this point we may turn again to England. In passing I may mention Herne the Hunter,[18] who although he has lost the club and donned the ' great ragg'd horns ' of his fellow-god of the underworld, Cernunnos, is nevertheless in the Hercules-Hernequin series. But we must go back to Cerne. There seems no reason for doubting the historicity of the incident recorded in all the lives of St. Augustine, in which he was sent to Cerne on a special mission to stamp out the pagan cults at that place. The story is well known and I have already commented upon it in ANTIQUITY,[19] but I must briefly repeat here the collateral points I made at the time. In Walter of Coventry's 13th century version of the story (otherwise verbatim from William of Malmesbury) there is interpolated the phrase ' in quo pago olim colebatur deus Helith ' after the mention of Cerne and other Dorset religious houses, while Stukeley in the 18th century states that the local people ' give the name of Helis ' to the Giant. This Helith-Helis name I connected with the Herlequin-Helethkin legend, suggesting that at all events the Giant was identified with a form of Hercules in the Middle Ages, and this may represent a true folk-memory.

The club-bearing demon of the Miracle Plays survives in the odd character in the Christmas Mummers' Play. Beelzebub, who usually appears at the end of the performance with other ' supernumerary ' characters introduces himself in some such words as :—

> ' Here comes I, Beelzebub,
> Under my arm I carries my club,
> And in my hand a frying-pan—
> Don't you think I'm a jolly old man ' ?[20]

To suggest any real connexion with the Giant of Cerne or with Hercules would be fantastic—but the people of Cerne may have had him in mind when they named the earthwork above the Giant ' The Frying-Pan '.

There is a final thread to follow in the multi-coloured skein. In the medieval Bestiaries we find a constant figure—the Wild Man, shaggy and club-bearing, virtuous and a slayer of monsters. Druce[21]

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[18] He is known solely from Shakespeare's ref. to him in *Merry Wives*, IV, iv, 29 ff., but seems to represent a genuine folk-tale.

[19] 1932, VI, 214–16, with references.

[20] Cf. E. K. Chambers, *The English Folk-Play* (1933), 65, and my remarks in *Folk-Lore*, XL, 193.

[21] G. C. Druce, ' Some Abnormal and Composite Human Forms in English Church Architecture ', *Arch. Journ.*, 1915, LXXII, 135–86.

(very rightly) identifies him with Hercules, pointing out that he never becomes a demon, but always remains human. Then, in the first half of the 14th century he is suddenly conventionalized in art as the 'woodwose' of heraldry—naked and hairy, club-bearing and usually represented as combating a lion or a dragon (PLATE IV). He becomes popular, and by the Renaissance is a frequent figure in masques and processions (as that before Elizabeth at Kenilworth in 1575). And for a last glimpse of Hercules—the god and hero, the Demon Hunter and the sprightly Fool—we can see him as the Cynic, in Campion's Masque before Queen Anne in 1613,[22] who appeared to the Queen ' out of a bower, drest in a skin-coat, with bases, of green calico, set thick with leaves and boughs : his nakedness being also artificially shadowed with leaves, on his head he wore a false hair, black and disordered, stuck carelessly with flowers '. Before long, he is ' conquered by Reason ' and goes off saying (rather dejectedly ?) ' henceforth my heart shall honour greatness, and love society ; lead now, and I will follow, as good a fellow as the rest '. ' As good a fellow as the rest '. The ultimate surrender of the individual to the mass.

[22] J. Campion, *Songs and Masques*, ed. Bullen (1903), 179 ff.

The Prehistoric Craniology of Britain

by W. W. Howells

American Museum of Natural History, New York

THE racial prehistory of Great Britain, while incomplete, has been brought to a provocative stage in its reconstruction. What follows is an attempt to set forth the framework of present knowledge, with its major lacunae, for the particular scrutiny of the archaeologists, on whom the anthropologists must largely rely for the testing of its stresses and strains.

Significant additions to this framework call for more material: more skulls for which the archaeological setting is perfectly known. This necessity, and the reasons behind it, have already been well stated by Miss Tildesley,[1] and it is to be hoped that her plea will prosper. The importance of the largest possible bodies of crania should be obvious; but judging from the frequency with which a craniologist is asked to expatiate upon a racial type represented by a single skull, the reasons may well be restated in simple terms. The apparent hoggishness of the physical anthropologist, which he himself terms a quest for ' statistical reliability ', is the product of two desiderata. In the first place, the larger the number of crania included in an average, the more surely is that average representative of the population; this is axiomatic. The second objective, equally important but not widely comprehended, is concerned not with the average but with the behaviour of the individuals in making up that average. In other words, whether the mean cranial index be 70 or 80, the manner in which the individuals mass about this mean is an independent and important character of the group. The measurement of this dispersion is the standard deviation, which requires a larger number of crania to be moderately reliable than does the average. It is not the whole truth to say that the standard deviation measures the degree to which the members of a series resemble one another: its greater usefulness lies in the fact that for all settled and generally endogamous human groups the degree of variation, or the appearance of the ' normal curve ', is much the same. To take a concrete example we may anticipate our subject-matter: the widest difference between the Neolithic and Bronze Age crania of Great Britain lies in the shape of the head, yet an individual skull with

[1] M. L. Tildesley, ' Bones and the excavator '. *Man*, 1931, xxxi, 31, no. 112.

an intermediate index of, say, 77, may be regarded, as far as head form goes, as being a wholly normal member of either group. The distribution of the whole group under investigation must therefore be established, and a range of variation, or standard deviation, which is above the average size may be regarded as the strongest possible indication that the group in question is not a normal one ;[2] not as it were even a hybrid nation, but a shuffling together of different nations, which is a crime against all craniological method.

These considerations demonstrate the necessity for sufficient crania for statistical analysis and presentation. Such treatment reduces the scope of the problems in hand, eliminates confusion and affords the only plausible basis for general intelligibility among interested students ; when, on the other hand, small numbers of skulls must be depended upon, the worker must rely largely on descriptive methods and personal impressions, which are difficult to communicate and poor material from which to draw conclusions.

The only application of the statistical approach to British prehistoric material has been made by Morant in a study[3] which stands as the authority for the general metrical features of the early crania. By assembling the scattered published data on Neolithic, Bronze and Iron Age skulls and treating them in the mass, he was able not only to determine more exactly than heretofore the mean cranial type of various periods or localities but also to show satisfactorily that these groups had the characteristics of other normal groups and therefore may be presumed to be authentic types. The descriptions which follow are largely based on his findings, which are corroborated by other material as well. For details of Morant's statistical processes and for all sources of material except the most recent, the reader is referred to Morant's original paper.

The succession of changing types of crania, as they are known, corresponds closely with the archaeological divisions, *i.e.*, the Neolithic, Bronze and Iron periods. Actually, the body of identified material is

[2] More exact tests, based upon the standard deviation, may be performed upon a group of crania to determine the homogeneity of its composition. The standard deviation is likewise the basis for all determinations of the likeness or unlikeness of two series.

[3] G. M. Morant, ' A first study of the craniology of England and Scotland from Neolithic to early historic times, with special reference to the Anglo-Saxon skulls in London museums '. *Biometrika*, 1926, XVIII, 56–98. See also B. G. E. Hooke and G. M. Morant, ' The present state of our knowledge of British craniology in late prehistoric and historic times '. *Biometrika*, 1926, XVIII, 99–104 ; A. Keith, ' The Bronze Age invaders of Britain '. *Jour. Royal Anthrop. Institute*, 1916, XLV, 12–22.

gathered into two chronological groups, one belonging to late Neolithic and early Bronze times, and the other to late Celtic and Roman times, with a great hiatus between them covering the late Bronze and early Iron Ages from which very few skeletons remain, the bulk having been destroyed by cremation at burial. Therefore we may clearly distinguish the characteristic cranial form of the Neolithic, and the effect upon it of the arrival of the equally characteristic but contrasted type of the Beaker People ; we may also form an as yet incomplete but distinct image of the prevailing late Iron Age type, which exhibits a considerable variety ; but as to possible genealogical connexions across the period of cremation we have little or no direct evidence. In other words it cannot be established precisely how far the Iron Age and the later populations of Great Britain were derived from that of the Bronze Age.

The crania of the Neolithic, mostly from Long Barrows, form a homogeneous type clearly defined in its character. It was above all strongly dolichocephalic with an average cranial index of 72 or less, and the skull was long in the absolute sense, the mean length of 193 millimetres or more being a very high figure. The nasal aperture was exceptionally narrow. These characters are constant in any of the published groups of Neolithic skulls, as well as being the main features of the inclusive Neolithic series assembled by Morant. Other features of the type, from Morant's series, are a medium head height and a narrow and short face, though some of the material indicates that the head may have been a few millimetres lower and the face an equal amount broader.

The homogeneity of the population is apparent not only from the uniformity of the various data. Morant also shows that there was no perceptible difference between the Neolithic crania of England and Scotland (nor do the few Irish crania appear to diverge), and when he pooled all the material regardless of provenience he obtained standard deviations and curves of distribution of an order typical of a single homogeneous community.

There is no reason to believe that future discoveries will modify in any important way these present conceptions of the Neolithic type and its racial unity, and they may therefore be accepted, as far as they go, as established. It nevertheless remains highly desirable to accumulate more data, either through fresh finds or by reworking material already excavated, in order to investigate any possible local variation in type, and the size and distribution of the population, and to determine more precisely the question of the true average height of the head and

breadth of the face, since these have an importance in relation to later types.[4]

Although the crania representing the early part of the Bronze Age are superficially ambiguous, there is no difficulty in understanding the true nature of events. A new physical type arrived, that of the Beaker People,[5] which differed considerably from the Neolithic inhabitants, particularly in being brachycephalic and broad-faced. It is probable that the Neolithic population was not a large one, and that the Bronze Age type came in considerable numbers ; at any rate the two forms met and to a certain degree amalgamated. There is every evidence that the meeting, in some regions at least, was amicable, for the two types may be found buried together in the same group of barrows.

In regard to the actual discoveries of the Early Bronze Age the situation is as follows. Several small series of twenty to thirty skulls are available, each of which derives from one locality or group of barrows, and these series fall into two classes. In one type the series is homogeneous, and the average cranial index is high, so that these groups apparently approximate the type of the Beaker People proper. Other series, found in Yorkshire, are patently heterogeneous, and the average measurements fall between those of the Neolithic and Bronze Age people, so that plainly both of these types are present, and from the behaviour of the standard deviations they appear to be present in pure as well as blended forms.

This intermingling and coexistence of the two types would be apparent to a student of morphology, but to demonstrate the fact beyond question it is necessary to use statistical analysis. Now in the brachycephalic series presumed to represent the Beaker People in a

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[4] In order to have the benefit of the largest possible number of skulls, Morant included in his Neolithic series a number of crania resembling the Neolithic physical type, but of Bronze Age date. These he selected from the Bronze Age material by a mathematical process for which the reader must be referred to the original paper. While the author agrees entirely with Morant that such individuals of the Neolithic race were present in the Bronze Age, he feels that the method by which they were segregated by Morant may have affected his total ' British Neolithic ' series, in which they were incorporated ; *i.e.*, the variability of the latter may have been artificially reduced, and it is possible that the average figures for basion-bregma height and bizygomatic breadth are too high and too low respectively. There is therefore the greatest need for sufficient crania of unquestioned Neolithic date.

[5] Archaeological opinion doubts that the Beaker People actually introduced bronze into Britain, but in dealing with physical form the terms ' Beaker People ' and ' Bronze Age type ' may be used synonymously.

pure form, the range in various measurements and the standard deviations denote a normal homogeneous group. In the case, however, of series where the Neolithic type is also present the same features show an internal variation which from all other evidence is biologically impossible in any established community, whether this be pure or hybrid in its racial origin.[6]

Morant's solution of the problem proceeds on this theory. When all of the Early Bronze Age crania are taken together, the cranial index of the whole is found to extend from a long-headed extreme of about 64 to a round-headed extreme of about 90 or more, the standard deviation being very high. Now it is impossible to suppose that the Neolithic type, the Beaker type, or any other type could produce such extreme individuals by itself, or even that a mixture of the two, after inbreeding for a few generations, would produce such wide extremes. It is only possible to interpret the data by assuming, as Morant does, that the Bronze Age material is made up of a pure Neolithic element (of which the cranial index would extend from 63 to 81 at the most), a pure Bronze Age element (with an index extending probably from 73 to 91) and hybrids between the two. Morant's method was, briefly, to remove from the whole Bronze Age series those crania whose measurements showed them to be of the Neolithic type, or most like it, continuing the process until the residue approximated, in a statistical sense, a normal group whose highest cranial indices were just over 90.

It may be supposed that the series thus obtained reconstructs the original type of the Bronze Age invaders as faithfully as possible. It closely resembles a homogeneous series of Round Barrow skulls from Derbyshire, which probably contains none of the Neolithic strain. The Bronze Age immigrants may therefore be described as follows : the skull was brachycephalic and very large, with a mean index of 81 or 82, and the face and nose were broad, so that in all these features there is a wide difference from the Neolithic cranium. The head height seems to have been much the same, however, and by reason of the general poverty of material it is difficult to say what the characteristic lengths of the face were in either case. On the whole, however, we have the same certainty as to the general type as in the case of the Neolithic race, and the probability that there was no great variety among the invaders, although the Scottish skulls indicate that here the Bronze Age people differed somewhat, being even more brachycephalic. The

[6] See W. W. Howells, ' The Iron Age population of Great Britain '. *American Jour. of Physical Anthropology*, 1937, XXIII, 19–29.

question of such variation, if any, throughout Britain, and the necessity of knowing to what degree, and where, intermixture with the Neolithic people occurred, call for the widest possible recovery of cranial material.

The known crania of Iron Age and Roman times are far less amenable to interpretation than those of the earlier periods. It is not yet possible to convey a clear general impression of a type or types. Most of the material is in small groups, and is often dubious as to origin or methods of presentation (see Morant); such fortunate occurrences as massacres and well-filled cemeteries are rare. The best which Morant was able to do was to assemble a series composed of several smaller published groups which did not differ from each other statistically, and to exclude those few groups which diverged, or seemed for some reason untrustworthy. This gave an Iron Age series which represents south-eastern England and Scotland. The most important features exhibited by the series are the lowness of the skull vault (133 millimetres) and the narrowness of the face (131 millimetres), both averages falling below those of the Neolithic and Bronze Age types; aside from this the cranium is long to medium, with an index of 75.

The objections to this Iron Age series are the unevenness of the material included in it, and the fact that so much must be excluded. Morant detected different types among the few crania from other parts of the country. Furthermore, several of the local groups, representing single communities, do not have the low heads and narrow faces of the general series. There are not, as was said, any large series of strictly Iron Age date, but there have recently come to light two sizeable series which may be regarded as of pure Iron Age ancestry. These are an Early Christian Irish series (Gallen Priory),[7] and a series from Dunstable Downs, Bedfordshire.[8] Both groups have heads of medium height, and medium to wide faces; furthermore, the cranial indices of both are higher than that of Morant's series and of many of its component groups. The Dunstable series has the highest index, with concomitant differences in the measurements of the cranium. In their general features, both series lie between the Neolithic and Bronze Age types.

To sum up, Iron Age remains allow us to say little that is

[7] Howells, *op. cit.* The paper referred to constitutes a preliminary report on the material, which was excavated by the author as a part of the Harvard Anthropological Survey of Ireland.

[8] D. Dingwall and M. Young, ' The skulls from excavations at Dunstable, Bedfordshire '. *Biometrika*, 1933, XXV, 147–157. [The series from the Maiden Castle cemetery is likely to provide even more valuable material when it has been studied. ED.]

definite about the population. It will probably become more apparent in the future that there was considerable local variation in type, although in general character the various known groups are just dolichocephalic or mesocephalic, and medium in head height and face size. By and large these groups are intermediate to the Neolithic and Beaker People types. It is probable that in southern England there were the special characters of a low head and narrow face, as Morant's series indicates ; but this series may have been influenced in these directions by the small Scottish skulls and by several southern groups of an unsatisfactory character.

The relatively abundant crania of the Anglo-Saxons[9] delineate a consistent type which somewhat resembles that of the Iron Age people, differing from it mainly in having a higher cranial vault than any type heretofore and in being dolichocephalic. The homogeneity of all Anglo-Saxon material so far reported is high. In many measurements the Anglo-Saxon type, like the Gallen Priory series, is intermediate to the Neolithic and Bronze Age types, and Morant suggests (p. 81) : ' There may be something to be said for the hypothesis that the Anglo-Saxon invaders of our shores were originally related to two contrasted racial types which were akin to the ones found in England in the late Neolithic and Bronze Age respectively, the Neolithic element predominating '.

Finally, it is necessary to describe, among recent crania, the three large series of 17th century London.[10] These form a single type (not necessarily that of other recent series) whose importance here lies in its great resemblance to Morant's Iron Age series of southern England (and Scotland), particularly in the low head and narrow face. This resemblance adds to the probability that Morant's synthesized Iron Age type is authentic and furnishes ground for believing that the Iron Age type is the fundamental one giving rise to the present population of England with little or no influence from the Anglo-Saxons.

The above description outlines the present body of fact from which the connexions of the prehistoric and the historic inhabitants may be judged. Until, however, this body is considerably increased, interpretation of its significance will naturally be varied.

The Neolithic people can arouse no differences of opinion. The homogeneity and universality of the race are beyond question, and its measurable features are constant and characteristic. The type of the

[9] Reports in *Biometrika* by Morant, *op. cit.* ; J. C. Brash and M. Young, 1935 ; D. Layard and M. Young, 1935.

[10] Reports in *Biometrika*, by W. R. Macdonell, 1904, 1906 ; B. G. E. Hooke, 1926.

Bronze Age immigrants may be accepted as equally well established, from Morant's analysis and from other facts, and there can be no doubt that there was a peaceful amalgamation of unknown extent between the two forms. Thus the early crania, as far as they are known, provide no enigmas. It is more difficult, however, to agree upon the origins of those forms which appear after the period of cremation. None of them is typically like those of the Neolithic or Beaker types but are mostly intermediate to the two. Morant believes that while the Neolithic people mingled somewhat with the Bronze Age invaders, the latter predominated and finally caused the disappearance of the former, the Bronze Age people similarly being largely exterminated by newcomers of the Iron Age, since the typical Bronze Age form is not found in the later period. The author however believes, together with Keith[11] and others, that the Neolithic inhabitants mixed extensively with the Beaker People, both types being extinguished only in the sense that in the late Bronze and the Iron Ages they were superseded by their own hybrid offspring. This change could certainly have given rise to the communities of Gallen Priory and Dunstable, whose measurements are like those of the actual Round Barrow groups already described, in which Neolithic type and Beaker type skulls are found together.[12] Judging by these two series alone, the Bronze Age element was probably stronger in England than in Ireland, since the Dunstable series resembles it more closely. However, it may be that both of the above hypotheses are correct, and that Iron Age invaders populated southern England while Bronze Age survivors continued to occupy most of the remaining territory.[13]

At present the principal problems relative to the early populations concern the events of the later Bronze Age and the general distribution of Iron Age types. When these are better understood the more complex questions raised by later events may be settled. The long-headed elements in England have often been ascribed to the Anglo-Saxons, but Hooke and Morant derive the population of London directly from the Iron Age, and in other regions, including Ireland, dolichocephaly is apparently the heritage of the Neolithic.

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[11] Keith, *op. cit.*, also *The Antiquity of Man*, 1928, 2nd ed.

[12] See Howells, *op. cit.*

[13] Archaeology has an analogy: in lowland Britain invading cultures tended to replace those existing, while in the highlands they tended to be absorbed by the latter.

Notes and News

CAW OF PICTLAND

The ' life ' of St. Gildas (*c.* 517–572 ?) speaks of the saint's father, Caw, as the ruler of ' the most fertile region, Arecluta '. Now *Arecluta* (modern Welsh *Arglud*, ' On-Clyde ') is certainly Renfrewshire. In the sixth century, and for long afterwards, this was a strongly Brythonic district, part of the British kingdom of Strathclyde, so if Caw was its king, he must have been a Briton, and probably a descendant of the ' tyrant ' Coroticus (Ceredig Wledig) whose raid on Ulster so angered St. Patrick. Yet in medieval Welsh literature Caw is often mentioned as *Caw Prydyn*, ' Caw of Pictland '. In the tale of *Kulhwch* we are told that Caw was lord of the 26 *cantrefydd* of Prydyn. So far as I know, there is no instance of Prydyn = Strathclyde, or any part of the territories of the northern Britons. It always seems to mean the land of the Picts, from Caithness to the Forth, except when confused with *Prydain*, ' Britain '. No other British king of the Dark Ages bears this title. Why is Caw associated with Pictland ?

The Pictish succession was by the female line, and in this way men who were not Picts on their father's side frequently had a valid claim to the kingship. During the seventh century the Picts were ruled by an Angle, Talorgan son of Eanfrith, and by a Briton, Bredei son of Beli. Was Caw another Brito-Pict who made a successful grab for the Pictish throne ?

The Pictish king-list comes to us through Irish scribes, and may distort non-Goidelic names almost beyond recognition. For instance, one scribe achieved *Ohan* for Welsh *Owain*, and Urien (Urbgen) of Rheged appears in the *Vita Kentigerni* as *Erwegende*. Therefore, if Caw is in the list, he may be heavily disguised.

Only one possibility appears—Galan Arilith (who reigned 510–522, according to Skene's *Celtic Scotland*). *Galan* might be explained as Caw + Brythonic *walan*, as in Welsh *Buddwalan*. *Arilith* could be Ari(c)lith = Arecluta (cp. Gaelic *Cloithe*, later *Cluaide*, for Old Welsh *Clut*, ' Clyde '). Thus, Galan Arilith may be Caw of Arglud.

This, in itself, falls short of proof. But there is another link. Welsh hagiology includes a female St. Cywyllog (of Llangywyllog,

Anglesey) who was a daughter of Caw Prydyn, and the wife of Medrod (' Sir Modred ') the arch-villain of Arthurian romance.*

Since Medrod was killed in ' the Action of Camlann ', about 538, and Cywyllog may have been born some years before 517, this tradition involves no chronological difficulty. It may be recalled that the Arthurian romances, from Geoffrey of Monmouth to Sir Thomas Malory, do not mention Medrod's wife, and tend to imply that he was unmarried. Therefore, any reference to his wife, no matter in how late a document, is very likely to be derived from pre-romantic (or pre-Galfredian) tradition.

Hector Boece, the Scottish historian or pseudo-historian, is generally regarded as somewhat less trustworthy than Geoffrey. This verdict is probably justified. But he was in a favourable position to collect surviving traditions of north-British origin. And he tells us that when King Arthur was fighting in the north, two of his chief allies were Lothus (Laudonus, Lleuddin) of Lothian, and a certain Gawolan. The son of Lothus, Medrod, is married to the daughter of Gawolan, as part of a treaty between Arthur and the northern chiefs. This would imply the identity of Gawolan and Caw. The Boetian form, Gawolan, also serves as a link between Caw and Galan.

The date of Caw–Galan's accession synchronizes with the activities of Arthur in North Britain, and one is tempted to wonder if some of Arthur's northern victories were fought to place his ally on the throne of Pictland. If so, we are not restricted to sites south of the Firth of Forth.

P. K. JOHNSTONE.

TIN DEPOSITS IN THE CAUCASUS

The contribution by Mr O. G. S. Crawford in a recent number of ANTIQUITY (March 1938, pp. 79–81) dealing with tin deposits in the Near East suggested that your readers might be interested in a brief summary of A. A. Jessen's[1] results.

The problem of native tin in the Caucasus has been studied by archaeologists since the discovery of bronze implements. G. Babst (*L'Etain*, Paris, 1884 etc.) was the first archaeologist to study the problem. His conclusions were against the possibility of native tin in

* S. Baring-Gould and J. Fisher, *Lives of the British Saints*, vol. II, art. *S. Cywyllog*.

[1] A. A. Jessen, *Olovo Kavkaza*, pp. 193–205. This report was translated by Eugene Prostov.

the Caucasus. Arzruai[2] who, at the request of Virchow, studied the geology of the Caucasus, reported that cassiterite ($Sn O_2$) did not occur. E. Chantre, de Mortillet, and J. de Morgan also believed that tin was not obtained locally. Chantre was inclined to believe that the tin in Caucasian bronze implements was of Indian or Central Asiatic origin. De Morgan suggested that the Caucasus might well be the intermediate point in the importation of eastern (Asiatic) tin to the west. S. Reinach, basing his conclusions on the philological studies of Oppert, also believed that tin was imported. Scattered finds of pieces of cassiterite have been reported since 1882, and the presence of tin was established in several copper mines.

A part of the study of the Metals Commission of the State Academy for the History of Material Culture (GAIMK), in Leningrad consisted in examination of archaeological specimens containing tin, and the discovery of areas of concentration of such objects.

For copper objects the earliest recorded occurrence of tin alloy was attributed to about 3000–2000 B.C. in the Kuban area, where it was present in implements from the famous tumulus of Maikop, excavated in 1897, and from the tumulus near Makhoshevskaĭa, excavated in 1916. The next stage of Caucasian metallurgy belongs to the second millennium B.C., a development characterized by intensive production of copper implements in the central and western portion of the northern slope of the Caucasus range. These objects, of distinctive local character, were also found on the southern slope of the range, in Abkhazia and Imeretia. The analysis of copper objects of this period by the Institute of Historical Technology disclosed that no tin was present, except in one instance, as an alloy mixture in a copper axe from Khamyshkovo on the Belaia River, in the northwestern Caucasus. As this find belongs in the same general area as those from Maikop it is probable that copper ores in this area contained tin.

Transcaucasian copper objects from this period were found to contain a greater percentage of tin, reaching 8.33–8.60 per cent. in the case of implements from the Kyzyl-Vank burials, and thus testifying to deliberate introduction of tin into the alloy. It is impossible to determine whether the tin in these objects was imported, or was obtained somewhere in the area of the Zangezur range or on Karadagh Mountain in Iran.

The third cultural area extends through the end of the second to

[2] 'Uber das Vorkommen von Zinnstein und die Bronze-industrie des Kaukasus', *Zeit. für Ethn.* 1884, pp. 58–60.

the beginning of the third millennium B.C. This period is characterized by flourishing metal industries throughout the Caucasus. Bronze objects are found for the first time in North Caucasus, particularly in the area near the main mountain complex. Bronze objects with a high percentage of tin, and objects of pure tin and pure antimony characterize the metal industries of this period. The following copper industry regions can be discerned :

1. Western Transcaucasia and the main Caucasian range.
2. Central Transcaucasia (*a*, eastern Georgia ; *b*, Armenia and western Azerbaidzhan).
3. Talysh Region (on both sides of the USSR.–Iranian frontier).

Since each area is characterized by typical metallic inventories, it seems probable that many distinct centres of production existed in each region. Chemical analyses have been made by GAIMK for the first two regions (all known objects from Talysh area, discovered by J. de Morgan, are now located in the Museum at St. Germain-en-Laye, near Paris). Talysh copper and tin were probably of Persian origin.

The copper employed in western Transcaucasia was probably of Adzhar-Chorokh origin, the area now partly in Turkey. The objects from this region are characterized by their red colour, contrasting with the light gold colour of other bronzes of the period. Both copper and bronze were revealed by analysis. It is thought that the source of tin lay outside this area. The prevalence of pure copper objects in the coastal area (Batum region) precludes the possibility that tin was imported from Trebizond or over the sea.

The bronze industries of the central Caucasus, well known because of excavations at Koban in northern Ossetia, differed from those from western Transcaucasia both in the type of inventory and in the composition of the materials. For example, there were far fewer types of agricultural implements : sickles, hoes, woodmen's axes, common in western Transcaucasia, are here unknown. Geographically, the area of Kobani culture is definitely located in the region of the central Caucasus—Kabardino–Balkaria, north and south Ossetia, the Gori and Borzhom regions of the upper Terek river. Copper found in central Caucasian cultural deposits may have been obtained locally from the northern slope of the Caucasus ; but it is more probable that it was imported from western Transcaucasia, or from the southern slope of the main range.

The chemical composition of bronzes from this area is well known, so that no new analyses were made by GAIMK. No objects of pure

copper have been recorded from this area. In all probability the pure tin finds described by Chantre were antimony objects of a familiar type. According to Jessen, the tin in this area could not have been imported from the steppes to the north, where bronze appears at a much later date. It is most probable that there were local sources of tin either on the southern slope of the range, along the upper course of the Rion river or in south Ossetia.

The bronzes from eastern Georgia differ typologically from bronzes found in the central part of the Caucasus and western Georgia, and approach in type (swords, rounded battle axes, flat arrowheads) those from Armenia and Azerbaijan. The difference between the bronzes of East Georgia, Armenia and Azerbaijan consists in the types of spearheads, daggers, and, particularly, in dress ornaments.

Jessen suggests that the copper supply also came from the southern slopes of the range, probably from the Alaverdi–Borchatin area. The percentage of tin in bronzes varies greatly, being greater in a sword analysed by GAIMK, and less in a dagger. This is explained by deliberate regulation of the composition of the alloy with regard to the functions of the implement. In two of the objects tin was absent, antimony and lead having been used.

The last group includes the implements from Armenia and Azerbaijan. These objects are most common near Lake Sevang (Redkin Camp) and in the regions of Gana, mountainous Karabakh, and Kedabek. The finds are less common in the southern area, along the Araxes river. The sources of copper were located in the Alaverdi Region and elsewhere in Transcaucasia. Pure tin objects have also been found as well as a few objects of lead and tin alloys.

The period from the beginning of the first millennium B.C. until the spread of iron in the sixth to seventh centuries B.C. is characterized by intensive intercourse with the west (Greek colonies on the Black Sea), south (establishment of Achaemenid dynasty in Iran), and the north (establishment of the Scythian state in the steppe regions).

Local sources of tin were abandoned at this period, and the Mediterranean tin was supplied through the regular trade channnels of the Graeco-Roman world. Jessen, who states that this process took place not only in the Caucasus but throughout the Near East, concludes :

1. Tin was used in the Caucasus from the end of the third millennium B.C.

2. Wide use of tin began with the manufacture of bronze implements and weapons, in Transcaucasia during the second millennium B.C.;

in the central Caucasus region at the end of the second millennium B.C.

3. During the highest development of local bronze industries from the end of the second to the beginning of the first millennium B.C. local tin was probably used, although in certain regions of Transcaucasia importation from the south may have been possible.

4. The probable tin-producing regions in the Caucasus were :

(*a*) Central Caucasus (including both slopes of the main range, from Elbruz to the Terek river), upper Racha ; south Ossetia ; regions of Sharopani, Gori, and Borzhom.

(*b*) The copper-bearing belt between Alaverdi and the Terter regions.

5. On the basis of archaeological objects, it is possible to suppose that the tin-bearing copper ores were located :

(*a*) In the basin of the Belaia river (Kuban, north Caucasus).

(*b*) In Gana region (Azerbaijan).

6. During the period of Greek and Roman economic influence western European tin was first imported in the Caucasus ; as a result of this, local tin-mining was discontinued.

7. Imported tin predominated in the Caucasus in modern times. Local tin production, which may have been practised, was of no importance.

HENRY FIELD and EUGENE PROSTOV.

EZION–GEBER

Whenever a strong king ruled in Jerusalem, and the kingdom whose destinies he guided was surging forward to new, or to the reconquest of old, power, Judah invariably turned towards Arabia. For two hundred years, approximately, Judah and Edom engaged in a bitter struggle for the domination of the trade-routes which gave access to the spices of Sheba and the gold of Ophir. A study of the history of Israel and Judah reveals that from the time of David on, and particularly during the reign of Solomon, Arabia was not the back door but the front entrance of Palestine. Solomon was the first, and the last, king in Jerusalem who not only benefited from the overland trade-route to Arabia, but also took full advantage of the sea-route from Ezion-Geber to Ophir. One of his successors, Jehoshaphat, attempted to do likewise, but his ships foundered on the rocks near Ezion-Geber before they could commence their first voyage.

> And king Solomon made a navy of ships in Ezion–geber, which is beside Eloth, on the shore of the Red Sea, in the land of Edom. (I Kings IX, 26). Once in three years came the navy of Tharshish bringing gold and silver, ivory and apes, and peacocks. (Ibid. X, 22).

Enterprising entrepreneur that he was, Solomon's shipping line evidently made such inroads in the lucrative caravan trade that had probably been largely in the hands of the Queen of Sheba, that she hastened to Jerusalem with all manner of presents, in order to conclude an amicable trade-agreement with him.

> And when the queen of Sheba heard of the fame of Solomon . . . she came to Jerusalem with a very great train, with camels that bare spices, and very much gold, and precious stones : and when she was come to Solomon, she communed with him of all that was in her heart, and Solomon told her all her questions . . . and she gave the king an hundred and twenty talents of gold, and of spices very great store, and precious stones. . . . (I Kings x, 1, 2, 3, 10).

A satisfactory commercial treaty was evidently negotiated between the two sovereigns, because we are informed that

> And king Solomon gave unto the queen of Sheba all her desire, whatsoever she asked, beside that which Solomon gave her of his royal bounty. (I Kings x, 13).

The site of Ezion-Geber has long been searched for, but it was not till a few years ago that its approximate location near the present shore-line of the northern end of the Gulf of Aqabah could be fixed upon. An archaeological survey-expedition of the American School of Oriental Research, Jerusalem, discovered a long line of copper-mining and smelting sites in the Arabah, whose main period of activity could be attributed to the time of Solomon by means of pottery finds. The Arabah, it will be remembered, is the long rift which extends between the south end of the Dead Sea and the Gulf of Aqabah, as the northeastern arm of the Red Sea is called today. During the Exodus, the Israelites trekked along part of the length of the Arabah, when they left Ezion-Geber and Elath on their way to Moab, according to Deuteronomy, 2, 8. One of the copper-smelting sites was found at the very end of the Arabah on the top of a hill immediately overlooking the Gulf of Aqabah. It was felt that Ezion–Geber could not be very far away. It remained for a German explorer, Fritz Frank, to discover the insignificant looking little mound called Tell el-Kheleifeh, situated about 500 metres from the seashore, and about half way between Aqabah at the east end of the head of the Gulf, and Mrashrash at the west end. It was covered with fragments of pottery, which he correctly judged to be very old. When the American School expedition examined the site, it was immediately seen that the sherds were much the same as those found on the copper-mining and smelting sites in the Arabah proper, and that many of them belonged to the period of King Solomon. It was possible then definitely to affirm the correctness of Frank's theory

that Tell el-Kheleifeh was to be identified with Ezion-Geber. Repeated examination of the entire shoreline, and particularly of the site of the Nabataean–Roman city of Aila, situated to the east of Tell el-Kheleifeh, has, however, failed to produce any traces of the sister city of Ezion–Geber, namely Elath. It is mentioned in the Biblical accounts down through the time of Solomon, and reappears then first in the accounts of the reign of Uzziah, to the complete exclusion of all further reference to Ezion-Geber. The possibility remains that vestiges of the Biblical Elath will be found deep under the ruins of Aila, but the writer considers it to be a very remote possibility, for reasons which will be dealt with below.

In March 1938 the American School of Oriental Research, Jerusalem, began the excavations of Tell el-Kheleifeh and concluded the first campaign there three months later. About a third of the site has been opened up, revealing for the first time in more than 2500 years some of the mud-brick structures of Ezion–Geber. After its final destruction sometime approximately in the seventh century B.C., the site was abandoned, and never again touched till our spades pryed into its secrets. The Nabataeans built their city farther to the east. The excavations have revealed an occupancy of Tell el-Kheleifeh from about the twelfth to the seventh century B.C. If Tell el-Kheleifeh were to be identified with Ezion–Geber alone, one should find there pottery dating no later than the ninth century B.C. The fact that the pottery finds at Tell el-Kheleifeh can be dated down to the seventh century B.C. convinces us, that in its later history, the site of Ezion-Geber was known as Elath. In its earliest history, Elath probably consisted of no more than a few mud-brick houses situated to the east of Ezion–Geber, and all traces of them disappeared, particularly after the name of Elath was transferred to the new city which Uzziah built on the ruins of Ezion–Geber. The latter site, to judge from archaeological evidence, seems to have been destroyed and abandoned for several generations, after the Edomites regained their independence from Joram, who followed Jehoshaphat to the throne of Judah. An example of two names given in different periods of history to the same site is furnished by the site of Tell Beit Mirsim in southern Judah, excavated by Albright, and which is known in the Bible as Kiriath Sefer and as Debir.

Beginning at the northwest end of the mound, the excavations have revealed what appears to be the industrial section of Ezion–Geber. A large refinery was found, containing ten furnace-rooms, and numerous pottery-crucibles placed over masses of hard-baked clay débris.

The ores which had been mined in the immediate vicinity and in the Arabah, and ' roasted ' on the spot, were brought to this refinery, and converted into ingots of copper. Some of these were then worked up into finished implements, ranging from copper dishes to spear-heads and fish-hooks, and nails. In each of the walls of the refinery were two rows of flues, the upper row leading into air-channels running along the length of the main walls. The strong winds which blow constantly from the north furnished the draft necessary for the proper working of the furnaces. The necessity of harnessing the winds to their industrial purposes explains why the original builders of Ezion–Geber chose what is actually the most inclement site they could possibly have found along the entire shore-line for the location of their city, Situated in the centre of a curve, backed on the east side by the hills of Edom which continue into Arabia, and on the west side by the hills of Palestine, which continue into Sinai, the refinery was exposed to the full force of the winds blowing most strongly down the centre of the Arabah. This fact explains also why the port of Ezion–Geber is today some 500 metres away from the sea. Frequent sand-storms accompany the winds, and we estimate that the sea is retreating at the rate of about ten centimetres a year. Originally, the sea was much nearer to Ezion–Geber than it is today.

In addition to its importance as an industrial centre and sea-port, Ezion–Geber was a central market-place for the great caravans which came from Arabia to Palestine. Much pottery was manufactured at Ezion–Geber not only for local needs, but also to supply the wants of the camel-trains, with their precious loads. Particularly common were pottery canteens, usually called ' pilgrim flasks ', with which the caravaners provided themselves for the thirsty rides in the practically waterless desert on their way to and from Ezion–Geber. Much of the pottery manufactured at Ezion–Geber represents new types, which can only be explained by the fact that it was the centre of a cultural area separate from that of Palestine and Edom, and which extended through northwestern Sinai and northwestern Arabia. Particularly interesting are large numbers of hand-made pots with ledge-handles, which in any other excavation the writer would have ascribed to the Early Bronze Age, dating before 2000 B.C. They were, however, all found with indubitable Early Iron Age types, similar or closely related to such types from Palestine and Transjordan. Beads, baskets, ropes and yarn were also produced in this busy city, located at the crossing-point of caravan routes, and at the head of the Red Sea.

The copper which was mined in the Arabah and refined at Ezion-Geber formed the main export which Solomon sent by ship and by caravan to Arabia in exchange for the valuable commodities obtainable there. It was a trade from which he waxed exceedingly wealthy. We are told in the Bible that

> 'the weight of gold which came to Solomon in one year was six hundred and three score and six talents of gold, beside that which he had of the merchant men, and of the traffick of the spice-merchants and of all the kings of Arabia, and of the governors of the country'. (I Kings x, 14–15).

Indeed, in the person of Solomon was fulfilled more than in any one else before him or after him the promise according to which Israel was to inherit.

> 'a land of oil olive and honey; a land wherein thou shalt eat bread without scarceness . . . a land [in this instance the Arabah] whose stones are iron and out of whose hills thou mayest dig brass. (Deuteronomy VIII, 8–9).

NELSON GLUECK,
Director, American School of Oriental Research, Jerusalem.

THE ODILIENBERG, ALSACE-LORRAINE

Mont St. Odile, as it is now called, is justly celebrated for the prehistoric fortifications, or Pagan Wall, which crown its summit; and has also gained some notoriety from a supposed temple on the site, which has been compared with Stonehenge and Avebury. A few words on both may be of interest.

The fortifications follow closely the irregularities of the hill-top, with a perimeter of about six miles and an enclosed area of some 250 acres. The wall, from 6 to $7\frac{1}{2}$ feet wide and still sometimes as much as 10 feet high, is constructed almost entirely of squared stones which average $3\frac{1}{2}$ by $2\frac{1}{2}$ by 1 foot thick. The interesting part about it is that each stone is cut on the upper surface with three, or more rarely four to five, sockets for the insertion of oak keys to connect it with its neighbour. The sockets are dovetailed, about 2 inches deep, 4 inches long, and $2\frac{3}{4}$ tapering to $1\frac{1}{2}$ inches wide. A few of the oak keys found *in situ* are now in the Strasbourg Museum. The chief object in so tying the stones together was presumably to prevent an enemy prizing out one stone after another from the face of the wall—a mode of attack to which unmortared walls must have been very exposed.

Inside the Roman stronghold at the very top of the hill was once a structure known as the Pagan Temple. It consisted of a circular

floor sunk about 18 inches into the rock and about 13 feet in diameter, round which were six, probably dressed, stone uprights. It was destroyed in 1740, and the site is now occupied by a ' gentleman's lavatory '.

A few hundred yards away M. Forrer some forty years ago excavated a small heap of rectangular-shaped stones, 15 inches below the surface, and 5½ feet in diameter. There were 280 of these stones, the longest 8 inches, and the great majority between 2 and 4 ; and in thickness they varied between ¾ and 2. At a distance of a few inches, but in a different stratum, was a complete Roman urn, and not far off some sherds of La Tène pottery. Among the stones themselves was a ' neolithic sherd '.

M. Forrer thought the stones may have been a child's toy ; that they were arranged in concentric circles ; and that the plan must have been copied from some model in the neighbourhood, perhaps (as there is none other known) the Pagan Temple, which he supposed may have had outer rings of which all trace has been lost. He also drew comparisons with well known stone circles, including Stonehenge and Avebury ; and besides illustrating these, attempted two reconstructions of his ' find '. They differ from each other, but are alike in showing some of the stones as lintels ; neither can claim to represent the actual toy, still less an original stone circle.

Nothing datable has been found in close association with the wall ; and the only direct evidence for the stones is the so-called neolithic sherd found in the same heap. M. Forrer attaches little significance to the Roman urn found just outside, or to the La Tène pottery scattered in the neighbourhood.

The stones were housed in the Strasbourg Museum, and disappeared during the war. Whatever the date or object represented, one cannot but deplore their loss. R. H. CUNNINGTON.

SICILIAN BRONZE SHAFT-HOLE AXES

Mr CHRISTOPHER HAWKES writes :—

Since the publication in the June number of ANTIQUITY (no. 46, p. 225) of the bronze shaft-hole axe of Sicilian Late Bronze Age type from the beach near Hengistbury Head, Mr G. C. Dunning, F.S.A., has kindly communicated to me another in the museum at Nantes (Loire-Inférieure). This specimen, of which he has given me a drawing, is very similar to the Hengistbury find, but with a larger knob behind

the shaft-hole and a less widely-splayed cutting-edge ; its length is 10 cm. As I pointed out (p. 227), these axes must have come from Sicily or South Italy by an Atlantic trade-route, and two examples of the equally Sicilian and contemporary elbow-brooch from West France (in the Vénat and Notre-Dame-d'Or hoards) make the appearance of such an axe in one of the principal West French museums no surprise. The axe is no. 82 in the F. Parenteau Collection (*Catalogue du Musée archéologique de Nantes* (1903), p. 22), but most unfortunately all record of the site of its discovery has apparently been lost, and in Parenteau's *Inventaire archéologique*, where the axe is figured on pl. 7, figs. 2 and 3, the text (p. 16) gives no locality whatever. It is therefore impossible to know whether this is simply a ' collector's piece ' and therefore archaeologically worthless, or a valuable link, from somewhere in the Nantes district, in the chain of finds proving the existence of a Mediterranean–Atlantic trade-route in the Late Bronze Age. If it is really the latter, a little trouble could easily have preserved the record of its discovery, just as failure to take a little trouble could have lost that of the Hengistbury (more strictly, Southbourne-on-Sea) specimen. And it is perhaps worth recording that the trouble in the latter case took almost exactly the course prescribed for our German neighbours by the authorities of Halle, as illustrated by the Editor in the same number of ANTIQUITY (no. 46, pp. 130–1). The only essential difference is that what is there contemplated as a matter of routine happened in this case by spontaneous individual initiative.

SIR GAWAYNE'S GREEN CHAPEL

In the fourteenth century romance entitled ' Sir Gawayne and the Grene Knight ', occurs a well-known description of the Green Chapel at which Sir Gawayne met the Green Knight in order to receive the return blow for the one he had inflicted on the Green Knight a year previously at Arthur's court. The following is a fairly literal translation of the passage : ' Then Gawayne strikes spurs into Gringolet and picks up the path, making his way along by a bank beside a wood, and rides over the rough hillside to the dale. Then he looked round him and it seemed wild to him and he saw no sign of a place of refuge anywhere about, but only high steep hills on every hand, with rough rugged crags and gnarled stones so that it seemed to him as if the crags grazed the very clouds. Then he halted and held in his horse and looked this way and that to find the chapel. But soon, a little way off, in a glade, he saw a sort of mound which seemed to him remarkable. It was a

rounded mound by a hill, beside the water's edge, near a waterfall in the stream which flowed there. The stream bubbled therein as though it were boiling. The knight urges on his horse and comes to the mound, alights in a seemly manner and fastens the reins to a lime-tree, his noble steed to a rough branch. Then he turns towards the mound and walks about it, debating with himself as to what it could be. It had a hole in the end of it and in either side and was overgrown with grass on all sides. It was quite hollow within, nothing but an old cave or the fissure of an old crag, he could not tell which '. (ll. 2160–2183).

The description of the chapel in the poem fits in quite well with the ordinary Neolithic or Early Bronze Age round or long barrow in all respects save one, and that is the fact that it has an entrance not only at the end but on either side. Burial chambers possessing curious holed entrances in the sides are comparatively rare but are to be found in various districts in the Cotswolds and elsewhere. Now the dialect in which this poem is written shows that it is definitely connected with the Northwest Midlands. There is one and only one chambered tomb with a holed entrance found in this region and that is the chambered tomb called the Bridestones, a few miles west of Congleton, situated among the foothills of the Peak district. There remains here a long rectangular gallery at the end of a long barrow, with holed entrance at the east end, and the remains of a porthole in the partition dividing the gallery into two parts. It had originally some side-chambers which might possibly be the other entrances referred to. The district in which the Bridestones stand corresponds closely with the vigorous description which the poet gives of the countryside through which Sir Gawayne passed to reach his chapel. The stones are situated close by the side of some high hills on the Cheshire–Staffordshire border. The whole district is wild and hilly. The only point in which the description of the situation of the chapel does not correspond is that it is not now on the bank of a stream. We need not however in a poem of this kind expect more than a general description of the most striking features of the scene depicted. The medieval poet did not set out to give a description accurate in every detail, any more than the modern poet does.

It is interesting to note that in Wales a number of these burial chambers are connected with the name of Arthur. And in Herefordshire a burial chamber between Bredwardine and Dorstone is called Arthur's stone. I have no evidence that the Bridestones were ever connected with the name of Arthur.

Miss Serjeantson in her article on the West Midland Dialect in the *Review of English Studies*, 1927, III, 327 ff. suggests that the dialect of the poem is that of the Peak district of Derbyshire. The Bridestones are close to this district. It would be too wild a surmise to claim the Bridestones definitely as the original of Sir Gawayne's Green Chapel. But it looks pretty certain that the chapel was a burial chamber of this peculiar type. If it is not Bridestones then it must be a similar one which has disappeared since the Middle Ages or which has not yet been noted. Both these alternatives are possible. There is in fact, 25 miles southwest of the Bridestones, near Mucklestone in Staffordshire, a site called the Devil's Ring and Finger (see ANTIQUITY, 1927, I, opposite p. 229) which is possibly the remains of a burial chamber with holed entrance, although it is in too ruinous a condition to allow of certainty on this point. I am indebted to Mr Glyn E. Daniel, St. John's College, Cambridge for information about the Bridestones.

BERTRAM COLGRAVE.

[While agreeing in general with Mr Colgrave's interpretation, we think it unnecessary to postulate that the monument was necessarily of the specialized ' port-hole ' type. Note that the ' holes ' are said to have been in the end and in either side of the *mound*. Such a description could quite naturally be applied to a partially ruined chambered mound, the ' holes ' being burial-chambers that had been exposed. There are several such megalithic barrows in Derbyshire which might suit the context equally well; see Mr C. W. Phillips' survey of the Megalithic Monuments of the Trent Basin, Ordnance Survey Professional Paper No. 11, advertised on the back of the cover of this number.—O.G.S.C.]

ANCIENT MONUMENTS

Letters are being received from readers in all parts of the country, complaining of the damage or destruction of ancient monuments ; even those which have been scheduled by the Ancient Monuments Branch of H.M. Office of Works are not immune. The Editor (O.G.S.C.) has decided to collect the relevant facts, and asks any readers who may know of recent instances to write to him direct. Please address to NURSLING, SOUTHAMPTON.

THE OUTRIGGER-NUGGAR OF THE BLUE NILE (PLATES I-II)

One of the least known of the many curious river-craft encountered in Africa is the outrigger-nuggar (*naggr*) of the Blue Nile, trading mainly between Wad Medani and Omdurman. The cargo generally carried is cut timber for the use of the river steamers and contractors. It is a strange looking craft, flat-bottomed and shallow in draft as befits a boat plying upon a river carrying little water when its Abyssinian tributaries are running low. To compensate in area for this deficiency in depth, the beam is extraordinarily great in comparison with the length, which is less than twice the maximum beam. The saucer-shaped hull lies low in the water with but six to eight inches of freeboard when fully laden. Like all Nilotic cargo vessels the bows are bluff and rounded, but unlike them there is scarcely any sheer in this region. Save for this insignificant rise, the gunwale is horizontal throughout its length. The stern is truncate, filled in, transom fashion, with cross planking nailed within the ends of the side strakes and against the outer face of the stern-post, here fitted on the inner side of the shell. A stem-post is present as well as a stout keel almost flush with the exterior surface of the garboard strakes. The rudder, as is usual in boats navigating on inland waters, is of great size and power ; instead of being slung by gudgeon and pintle as in other Nilotic craft, its head is held in position by stout lashings led inboard around the top of the stern-post ; below, the heel of the rudder-post appears to rest on the projecting end of the keel. The tiller has its own individuality ; instead of the straight bar sloping upward to the hands of the standing steersman, as seen in the gyassa and Nubian nuggar, it lies in a horizontal plane save for an arched curve to allow it to clear the projecting head of the stern-post and the bulky rudder lashings.

Neither frames nor ribs are present. The rigidity of the hull depends entirely upon the thickness and strength of the skin planking, the thoroughness with which the components are combined into a self-supporting whole, and upon the presence of three stout deck beams, tying together the two sides. The master beam is placed at mid-length, with the others near to the stem and the stern to function respectively as supports for short fore and after decks. The space between the decks is open, with the after part roofed with reed matting on a rudely made arched framework, for the protection of passengers and perishable cargo. The exterior of the hull is left naked ; neither paint, tar nor oil is ever applied.

As these boats depend mainly upon their sweeps when going

downstream against the wind, but have to be tracked along the bank by three or four of the crew when going upstream, no true mast is carried ; in its place is a tall and slender tracking pole in two or three spliced sections, bearing at the summit a broom-like finial. Sometimes, if the wind be specially favourable, a makeshift sail—a strip of cotton or a boatman's garment—may be spread aloft on a couple of poles. According to Mr A. E. Robinson the men row seated, facing the stern except when threading their way through channels choked by shifting sandbanks ; at such time they stand, facing forward, ready to check the boat's way, or to backwater should she touch ground (PLATE I).

In common with the ordinary type of sailing nuggar trading on the Upper Nile in the reaches between Khartoum and Luxor—the type from which this craft is the degenerate descendant—the skin planking of the Blue Nile outrigger-nuggar consists of short lengths roughly hewn from the trunks of the thorny *sant* tree (*Acacia nilotica*), the one common timber tree of the country. These planks, varying between four and eight feet in length on the average, have to be of exceptional thickness, $2\frac{1}{2}$ to 3 inches, for the lack of frames to which they could be nailed has necessitated the adoption of a specialized technique.[1] Until 1820 when the Turks, having occupied the country, introduced the use of iron nails and spikes,[2] it is probable that nuggar planking in the Dongola reaches[3] was pinned together with hardwood dowels in the manner seen in the funerary barges of the XIIth Dynasty, found at Dahshur and now in the Cairo Museum.[4] With the introduction of metal fastenings, the technique had to be modified. In the method adopted the thick planks continued to be applied edge to edge, but in lieu of broad dowels, long iron nails were driven obliquely downward through the seam. To allow of this being done without leaving the nail heads projecting, a notch is cut in the upper plank a couple of inches or so above the seam and it is here that the nail is driven downward into the lower plank.

The origin of this system would be extremely doubtful did we not

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[1] In nuggars built north of Wadi Halfa a few frames are inserted during construction; this is an innovation due to culture contact. Even so, it must be noted that the frames are put in *after* and not prior to planking up the sides ; also, that no inner skin is provided.

[2] Lord Prudhoe, ' Extracts from private Memoranda . . . on journey from Cairo to Sennar in 1829 . . . ' *Journ. of the Royal Geographical Society of London*, 1835, V, 58.

[3] Until Ismail Pasha's conquest of the Sudan in 1820, no planked boats were in use on the Nile south of Khartoum, apart from some canoes with side planks added.

[4] Somers Clarke, ' Nile Boats and other Matters ', *Ancient Egypt*, 1920, pts. I and II.

know that the iron for making nails, imported for boat-building purposes on the Blue Nile in 1820 and for some years thereafter, was shipped from Odessa in Russia and reached Khartoum viâ Cairo and the Nile.[5] Because of this and the fact that the first boat-builder employed by the Turko-Egyptian Government to build boats and barges on the Blue Nile was a Greek,[6] it is reasonable to infer that the technique also came from a Russian source, for we know that a certain primitive type of barge in use on inland waters in Russia is put together in practically the same manner. This Russian technique has been described and illustrated by D. Verwey[7] (see FIGURE opposite).

Indian traders at Suakim and Wad Medani may also have had some influence, for in vessels built on the Gujarat coast of India a similar method of spiking each upper plank to the next lower one is employed. But the Russian technique is more nearly related, for by it flat-edged planks are used, whereas in the Gujarat technique an elaborate zig-zag tongue and groove joint is employed.[8]

The survival in the Sudan of a boat-building technique closely allied to that of Dynastic Egypt—absence of frames, the joining of the skin planks by dowels or pins formerly, by nails today, and the lack of an inner skin—is of great interest, but we have to recognize that the features enumerated are shared in common with all typical Nile nuggars, whereas the presence of an accessory rowing-fitting of specialized form is a distinctive characteristic, confined, I believe, at the present day to the Blue Nile nuggar. This peculiar accessory consists of two massive outrigger booms, roughly squared to about 6 inches, projecting from each side of the boat. Passing inboard over the gunwale, to which they are made fast, the inner ends in each pair are overlapped and bound firmly together.

To form each outrigger boom a stout and long branch of tough *sant* wood is chosen, with a natural forking at one end. The branches of this fork are left a few inches in length and this crutch forms a rough but efficient rowlock, wherein a long sweep rests and pivots. As the distance outboard of the rowlock is from eight to nine feet, the loom of the sweep is correspondingly long. So, too, is the blade, long and rather narrow, parallel sided, with an elegant curve in the outer half.

[5] Lord Prudhoe, *loc. cit.*, p. 57.

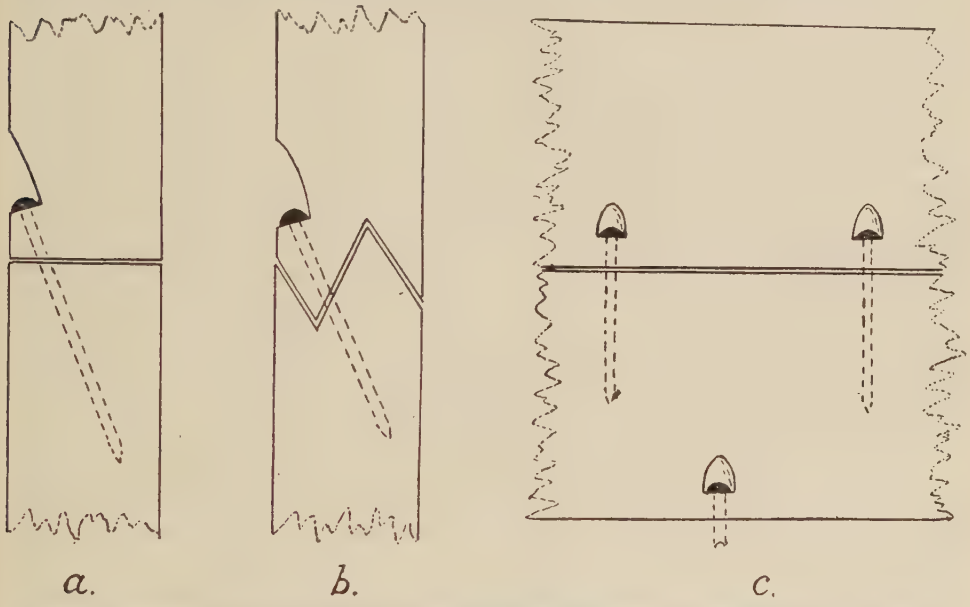
[6] ibid. 58.

[7] ' Russian Barges ', *The Mariner's Mirror*, 1931, XVII, 189.

[8] J. Hornell, ' The Tongue and Groove Seam of Gujarati Boatbuilders ', *The Mariner's Mirror*, XVI, 309–12.

When suitable timber is not available from which to fashion a complete sweep, the blade, measuring some eight feet in length, is spliced to the outer end of the loom and secured by several clenched nails. In spite of the length, one man suffices to manage each sweep.

Apart from the East African outrigger canoe where the type is Indonesian and the outrigger employed solely as a stabilizing fitting on seagoing craft and never used as an accessory in propulsion, there is



(*a*) EGYPTIAN AND NORTH RUSSIAN SYSTEM OF JOINING STRAKES; (*b*) THE GUJARATI SYSTEM; (*c*) BOTH SYSTEMS ARE IDENTICAL IN FACE VIEW

nothing even remotely resembling the nuggar-outrigger in Africa. Except for coastal outrigger canoes in which paddles replace oars when sail is not employed, the same absence of any related device is true also of Asiatic water transport.

In the search for a possible source of origin three widely separated instances of the outboard pivoting of oars are known. They comprise :

(*a*) The bracket outriggers of rowing skiffs such as are used in England in the inter-university boat-race.

(*b*) The outboard gallery, parados or outrigger on either side of the galley type of vessel, whereof the Venetian *Bucentaur*, destroyed by Napoleon, was the last survival. Powerful sweeps

pulled by several rowers pivoted on the outer edge of this outwork. The same type in rude form (*kora-kora*) existed in the Malay Archipelago into the 19th century and a vessel so propelled is figured by Admiral Paris in his monumental *Essai sur la construction navale des peuples Extra-Européens*, 1841.

(*c*) The remarkable adaptation of the European type of oar to use in the double canoes of the Atiu Islanders in Polynesia.[9] This occurred subsequent to the arrival of the missionaries, so we may conclude that it was due directly to European influence and direction.

There has also to be considered the possibility that the Sudan device may be of independent invention, derived from the outboard frame employed to increase cargo capacity when carrying light and bulky goods. This frame as seen in use on a sailing nuggar which I photographed in 1937 at Aswan (PLATE II) consists of a couple of booms projecting outboard on each side of the hull, with a strong fore-and-aft bar connecting their ends. The Atiu device is almost identical and it is conceivable that the mention made by Warington Smyth, whose observation dates about 1900, that rowing outriggers were regular appurtenances of the ordinary *sailing* nuggar of Nubia[10] may refer to a type of outrigger, whether a permanent or a temporary fitting we do not know, based upon this cargo carrying accessory.

This hypothesis appears however to be improbable, for the negro, while cleverly imitative, is decidedly uninventive except in matters vitally important in his everyday life. Even more improbable is any connexion with (*a*), the rowing skiff with outrigger fitting, for the very good reason that the Sudan device dates back to a period long before contact with English customs became operative. If we have to consider the Sudanese rowing outrigger as a contrivance not of recent introduction, the most probable conclusion would seem to be that in it we have a much degraded survival of the outboard parados of the Mediterranean galley, whereby adequate leverage was provided to enable sweeps of great length to be employed with the maximum of propulsive force combined with a minimum of human effort.

Should this be the correct solution of the problem of the origin of

[9] A. C. Haddon and J. Hornell, *The Canoes of Polynesia*, vol. I, fig. 110.

[10] *Mast and Sail in Europe and Asia*, p. 297, 1906. His words are :—' In coming northward down river, and against the prevailing wind, they [the nuggars] are fitted with outriggers and long sweeps, and row double-banked—the men stand to their work facing forward '.

this remarkable African method of increasing the leverage of oars, then in the nuggar of the Blue Nile—a degenerate and recent modification of the Dongola nuggar—we have a combination of features derived from three very diverse sources. The lack of frames and of an inner skin and the former use of dowels, continue the boat-building tradition of the Middle Empire of Ancient Egypt ; the use of outrigger leverage for the sweeps is a link with the days when Turkish corsairs raided the Christian coasts of the Mediterranean in their piratical galleys, while the substitution of iron nails for wooden dowels to fasten together the skin planking in the peculiar manner described is a connecting link between the river craft of Russia and those of the Sudan.

For the photographs of these outrigger boats and for many details gathered during a long residence in the Sudan I am indebted to the generosity of Mr A. E. Robinson, who has kindly placed all his information on this subject at my disposal, including the reference to Lord Prudhoe's travels in the Sudan. JAMES HORNELL.

REINDEER ROUND-UP (PLATE III)

The accompanying illustration is from a photograph of a drawing by George Aden Ahgupuk (Twok), a young Alaskan.* It represents ' the most exciting event in the Eskimo year : the reindeer round-up into the communal corral. Dogs are chasing reindeer, Eskimos are wrestling with stray stags, animals are galloping wildly and villagers are slipping, sliding and shouting '. So far as one can see there are points of resemblance with the well-known ' kites ' of the Transjordan Desert (see ANTIQUITY, 1929, III, 395, 401, 403–4) ; though of course the ' kites ' are of stone walls. The drawing is published here for its anthropological interest, as an illustration of primitive hunting methods by one of the hunters. It does not appear to need any fuller description, though a verbal account by someone with intimate knowledge of the practice would have been interesting if it had been available.

O.G.S.C.

UNDERGROUND DWELLINGS IN CENTRAL EUROPE (PLATE IV)

In ANTIQUITY for March 1936, pp. 25–36, we published an article by Dr Buttler on existing forms of primitive habitations in Europe. The

* It was published in TIME, 25 Jan. 1937, p. 29. We wish to thank the Editor for permission to reproduce, and one of our readers, Miss A. E. Robinson, for her kind help in securing, the print.

accompanying illustration, first published in 1673* will be of interest both to Central European students and excavators. Allowing for some rather unnatural symmetry and neatness, for which the engraver is probably responsible, the picture gives a good idea of a type of dwelling that must be a survival from very remote times. The following is the description in the text :

' From thence we came to Valcovar, where there is a handsome wooden Bridge over the River Walpo or Valpanus, plentifull of Fish ; and upon which, to the Westward, stands the Town of Walpo, taken by the Turks in the year 1645. Then by Sotzin Palanka, and Towarnick or Tabornick, to Metrouitza a large Town, and a great place for a Faire, strengthned by the adjacent Lake. So to Simonovitz, leaving at a good distance on the right hand the famous old Sirmium, now an inconsiderable place, whereof I have also said somewhat elsewhere. They call this Country, Schremnia ; and that, more near the Dravus, Bossega.

In this Country, many Families, and the Inhabitants of divers little Towns, live all under ground. I had formerly read of Troglodytes and subterraneous Nations, about Ægypt ; but I was much surprized to see the like in this place, and could not but say unto my self :

Now I believe the Troglodytes of old,
Whereof Herodotus and Strabo told ;
Since everywhere, about these parts, in holes
Cunicular men I find, and humane moles.

Near these Habitations are Wells, to supply them with water ; which they draw up, like Dyers and Brewers : and dogs come out upon Strangers. As we travelled by them, the poor Christians would betake themselves to their holes, like Conies. So that, to satisfie our curiosities, we were fain to alight, and enter their houses, which we found better then we expected, divided into partitions, with wooden chimneys, and a window at the farther end, a little above the ground : and all things as neatly disposed, as in other poor houses above ground ; although but meanly, after the fashion of those parts. Their speech is a Dialect of the Schlavonian. So travelling on between the Danubius and the Savus, we came to Zemlin upon the Danube ; from whence we

* *A Brief account of some Travels in Hungaria* [and other countries] by Edward Brown, M.D. *London*, 1673, pp. 37–9, plate opposite p. 38.

PLATE I

A PAIR-OARED OUTRIGGER OF THE BLUE NILE (*see* p. 355)
ph. A. E. Robinson

facing p. 360

PLATE II

A SAILING NUGGAR AT ASWAN FITTED WITH AN OUTRIGGER FRAME,
TO INCREASE CARGO CAPACITY (*see* p. 358)

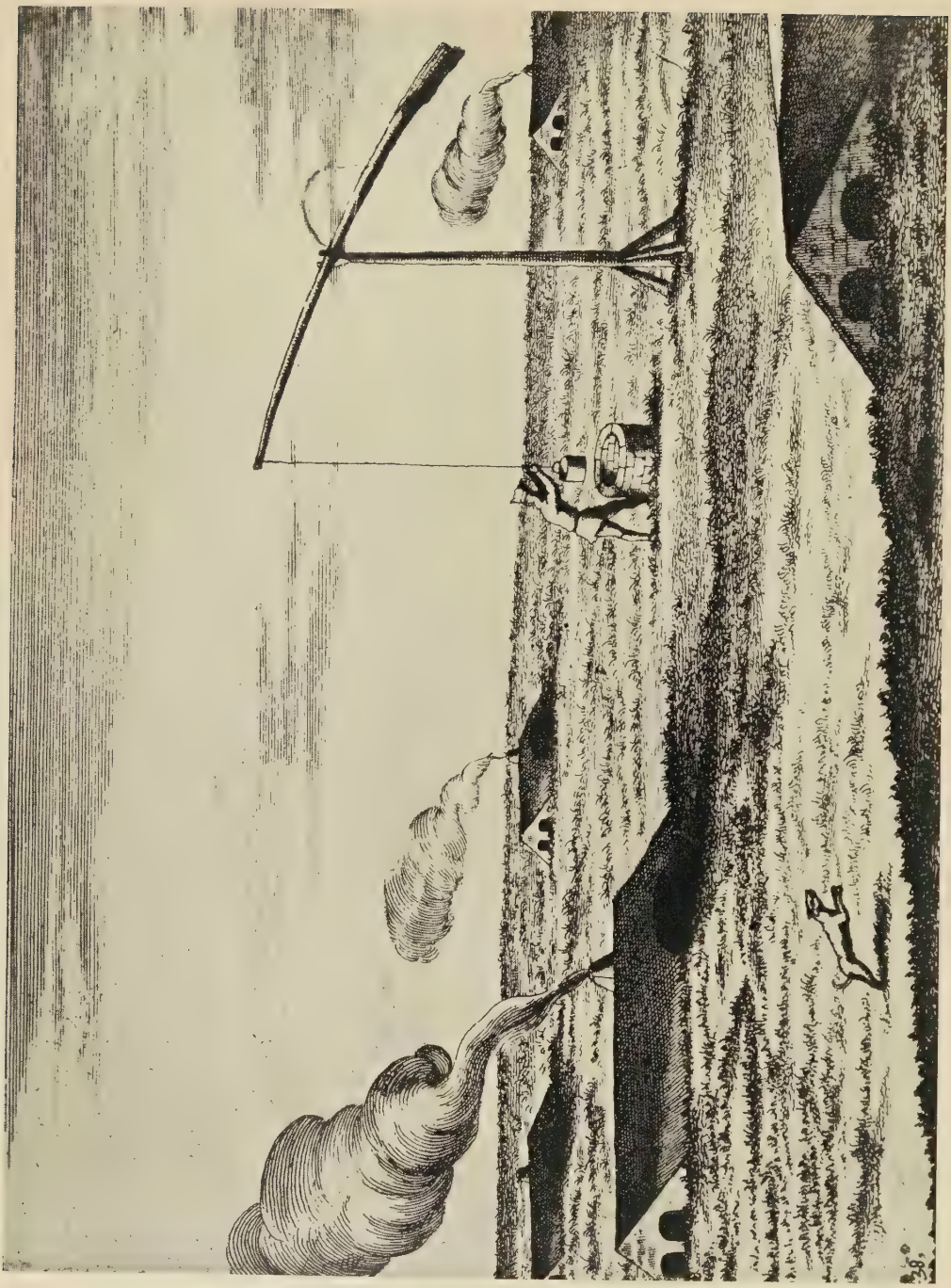
ph J. Hornell, 1937

PLATE III

AN ESKIMO REINDEER ROUND-UP (see p. 359)

From drawing by G. A. Ahgupuk

PLATE IV



UNDERGROUND DWELLINGS IN CENTRAL EUROPE (*see* p. 360)
After Edward Brown (1673)

had a fair Prospect of Belgrade, into the Castle of Zemlin, Stephen, the usurping King, retired, and dyed. From hence we passed by water unto Belgrade'.

THE OUTER HEBRIDES*

The Outer Hebrides are one of the few parts of Great Britain that are still inhabited by a homogeneous peasant population. Owing to their comparative isolation and to the fact that Gaelic is the native language of the inhabitants—English being little known until the Education Act of 1872 had been in effective operation for some time—the islands have preserved, although of course not uniformly, many interesting practices, some of which are of considerable antiquity.

The observations of the writer were made mainly in a township in one of the southern Outer Hebrides. The conditions described are by no means applicable throughout the Outer Isles today, and must not be considered typical. At the same time, they are representative of a way of living which, in slightly varying forms, is well within memory throughout the Isles.

A long period of residence in this particular township gave the opportunity to acquire, amongst other things, much information about the economic organization of life there, a kind of organization which is now everywhere in decay, but which still persists in this particular locality with some vigour, owing to its comparative remoteness (it had no proper road, and was really only accessible by small boats) and the consequent difficulty of transport and communication. Strangers were seldom seen there. In consequence of this isolation, the inhabitants were unusually interdependent. Spontaneous co-operation in various kinds of work, and what may be called rural industry, were carried on to an extent that cannot be found anywhere in the country on the mainland.

There are eight cottages in this township, each with a croft of about 5 acres of poor and often badly drained ground, besides hill-pasture. Each cottage had one to three cows, with or without calves, 6 to 50 sheep (though some had none); also poultry. Pigs are not kept. None of the inhabitants had yet been able to avail themselves of the loans that are made by the Board of Agriculture for housing, with the result that

* Mrs Campbell's notes may be regarded as supplementing Dr Curwen's article on pp. 261–89 of this number for they give first-hand information about local life in the Hebrides with which only a resident can be familiar.

the cottages were all of the old-fashioned type ; not, it is true, of the primitive black-house type, of which a few survive elsewhere, with the fire in the middle of the floor and a hole in the roof to let out the smoke ; but thatched houses with three rooms, usually with a fireplace at each end of the house. Some of the houses had had American stoves installed recently in place of the open fires in the kitchens ; the improvement is a doubtful one. The diet remains the same as before ; boiled potatoes, salt herring, scones and tea. The walls are made of double layers of stone, the interstices being filled with small stones or earth. Small stones are considered preferable, as rats can find a place in an earth-filling.

The thatch is put on in the following manner. The rafters are covered with sods of turf (*sgrathan*) with the grass on the outside, as for shingling. The thatch is then put on top in a way that prevents leaking. It is very important that the thatcher should not put his foot or any appreciable weight on the roof, as this might break the sods underneath. The thatch used is the rush or bent grass ; sometimes bracken is laid over it. These houses are warm in winter and often more comfortable than they appear from the outside. The thickness of the walls and the low height of the houses make the winter gales much less felt than in a more modern building.

The soil is very peaty ; it suffers from constant cropping and a lack of lime. Cow dung, peat ashes, and (most important of all) sea-weed are the manures used. The crops grown are oats (for animal consumption), potatoes, turnips, and a few cabbages. The work involved in raising them is comparatively arduous. The spring work begins with cutting the seaweed ; it is accessible only at spring tides, and is cut with a toothed sickle (*corran gearraidh*). The work of cutting and carrying is strenuous enough, particularly in cold windy weather. After cutting at low tide, the seaweed is secured by ropes (*maoisean*) ; the rising tide then floats the bundles in, when they are secured and carried to the fields in baskets, usually by hand. The seaweed is spread over the ground evenly. On the oat land, the earth is turned about three weeks after the seaweed has been laid ; the lumps are pounded by a wooden rake and the whole is then harrowed by hand, and the oats are hand sown.

The potatoes are planted with a dibble in lazy beds (*feannagan*). The seaweed is laid in strips 3 feet broad and 2 feet apart, and the intervening turf is turned back over it with a spade or *caschrom* (the old native wooden implement). It is less than 200 years since the potato was

introduced into the Outer Isles ; now it is an essential feature of their rural economy.

The work of cutting and winning the seaweed is done co-operatively as is that of getting the peats, which are cut and set to dry as soon as the spring work is over. The whole township uses nothing but peat for fuel. April and May are thus the busiest months as far as the land is concerned, ' spring work ' (*obair an earraich*) taking up everybody's time. In the autumn the lifting of the potatoes is often done co-operatively also.

The sheep are not sold off the island, the cost of transport being so great, but are slaughtered and consumed locally. The wool is spun into yarn for tweeds, blankets, and jerseys on the spinning wheels, of which there is one in nearly every cottage. The cloth is usually dyed with local dyes made from crotal, heather tops, iris, and water-lily roots. Of all the agricultural produce, almost the only thing disposed of for cash is the cattle, which are sold to dealers from the mainland at the cattle sales (*féillean*) which take place once a year. The prices are often unsatisfactory, partly owing to the high steamer freights, while ' rings ' are complained of. The remaining cash income of the crofters is made up from the sale of lobsters (a good price would be 1s. per lobster to the fishermen) and of herring (when caught in sufficient quantities). A good many lythe and saythe are caught for local consumption. Many households receive regular remittances from members of the family employed in the Merchant Service or on the mainland or in Canada or the United States. This income naturally varies with the general level of industrial prosperity, and has recently been much reduced. The township where the writer stayed not being on the Atlantic side of the island, there was no income from the kelp, which until a year or two ago was collected and burnt as a source of iodine. The estate handled the transaction and the money earned was offset against the crofter's rents.

Apart from these sources of income, there is an extensive system of barter with the local merchant, who takes eggs, butter, fish, sheep and calves in exchange for tea, meal, manufactured clothes, lamps, etc. The price of such imports is comparatively high, but the pressure of ' fashion ' is felt even here.

The rent of the holdings is about 35 to 40 shillings a year. The economic system, which runs counter to the ' division of labour ' is regrettably precarious. The land is obviously marginal land, and in the absence of resettlement schemes it is impossible for any of the crofters to

hope ever to acquire a better holding, even though on other islands, and on the mainland, there is better land unoccupied.

The Outer Hebrides are almost the last home of a real oral literature in Great Britain. This literature comprises songs (many of which are labour songs, sung while rowing or when waulking cloth), stories, local traditions, and cures. Some of the songs and stories relate events of over 200 years ago. Martin Martin in 1695 reported that Fergus Beaton, the native doctor of South Uist, was in possession of ' the following ancient Irish manuscripts in the Irish character ; to wit, Avicenna, Averroes, Joannes de Vigo, Bernardus Gordonus, and several volumes of Hippocrates ', so perhaps the traditional cures now used may have a very respectable background. How far these are related to the methods of the above physicians would be an interesting subject for research by someone who knows both Gaelic and medicine. Many of the cures are of course for sicknesses in animals. Gaelic is the habitual language of all the inhabitants of the township where the writer stayed, young and old ; but new articles of recent importation tend to be only known by their English names. The coming of the first motor car to the island, for example, meant the introduction of a whole vocabulary of English technical words for which no Gaelic equivalents were known. In the township itself, English influence is otherwise little felt, and the Gaelic oral literature maintains itself as the principal source of entertainment. M. S. CAMPBELL.

FLIGHT OF LEARNING TO THE WEST.

In his article on the origins of Hiberno-Saxon art (ANTIQUITY, 1934, VIII, 50), Mr A. W. Clapham suggested that certain influences, including the ' chip-carving ' style, might have reached Ireland from Gaul through the emigration of the learned and upper classes fleeing before the waves of barbarian invasion. One of the chief evidences for this emigration is a curious passage irrelevantly interpolated in the Leyden Glossary, which survives in a 12th century manuscript. It reads as follows in translation :—

' The Huns, who are the offspring of an infamous union, *i.e.* of demons, after they had found their way by the guidance of a hind through the Maeotic marshes, attacked the Goths, whom they terrified exceedingly because of the unlooked-for horror which they inspired. From them the devastation of the whole empire took its beginning, and it was completed by Huns and Vandals (Guandalis), Goths and Alans, at whose devastation all the learned men on this side of the sea took flight, and in transmarine parts, namely, in Ireland (Hiberia) and wherever they betook themselves, brought about a very great increase of learning to the inhabitants of those regions '.

These events took place during the second half of the 5th century.

Commenting on it Dr Kenney[1] says :—

'It is reasonably certain that the original of this extract was written in Gaul in the sixth or seventh century and represents a tradition then held regarding the decline of learning on the continent and its advance in Ireland. It is the only reference among our scanty sources to the flight of a portion of the upper classes across the western sea to escape the barbarian terror; but that such a movement took place in at least a small measure would be, in view of the general situation, a not unnatural inference. It was made by d'Arbois de Jubainville, who, seemingly, never heard of the Leyden document. But the words of the text point to an exodus on a considerable scale, and have been accepted as evidence thereof by Zimmer and Meyer, who see in it the explanation of much that is otherwise obscure in early Irish history. Among specific facts which derive a peculiar significance in the light of this record are the following: (1) the occurrence of the word "Bordgal"—the Irish form of *Burdigala*, Bordeaux—as a place-name in Westmeath and in Kilkenny, and also as a common noun in the sense of "meeting-place, place of assembly", (2) the implication in the *Confession of Patricius*—a contemporary of these Gallic *émigrés*—of the presence in Ireland of a body of scholars well educated in the Latin tongue who regarded with scorn the illiteracy of the saint and even questioned the legitimacy of his mission: (3) the Irish origin of the *Hisperica Famina*: (4) the traces in early Irish writings of the influence of late Gallo-Latin literature'.

Early trade connexions between Ireland and Gaul are well established.[2] Among Irish exports were dogs[3]; it was with a ship-load of these that St. Patrick escaped from his early servitude in Ireland; and among the imports was wine, such as that brought to St. Ciaran at Clonmacnoise about the middle of the 6th century. It was perhaps from this source that came that strange recent discovery of an amphora fished up in the Atlantic off south-western Ireland (*Journ. Roman Studies*, 1934, XXIV, 220–1, pl. 20; ANTIQUITY, 1935, IX, 352).

O.G.S.C.

CORRIGENDUM

A mysterious typographical 'mishap' caused an absurd reading in Dr Curwen's article in our June number. Page 152, line 2, should read—

when dried in an oven there was less flattening but no angular fragments.

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[1] *The Sources for the Early History of Ireland*, by J. F. Kenney, New York, 1929, 142–3.

[2] See my chapter 'Western Sea-ways' in *Custom is King*, 1936.

[3] Irish hunting-dogs reached Rome in the 4th century A.D. (Symmachus, Ep. II; Kenney, p. 137), and 'Celtic' hunting-dogs, from Britain or Ireland, were exported thence before the Roman conquest (Strabo).

Reviews

URGESCHICHTE KAUKASIENS von den Anfängen seiner Besiedlung bis in die Zeit seiner frühen Metallurgie. *By* FRANZ HANČAR, *Vienna : Anton Schroll and Co.*, 1937. *pp.* 448 *and* 56 *plates.* RM. 36.

Caucasian archaeology always fascinates West Europeans both because of the intrinsic charm and spectacular wealth of the Metal Age finds, and because the region lies on the frontier between Europe and Hither Asia and has been claimed as the cradle of intelligent metallurgy if not of the ' Aryans ' themselves. Since the war so much has been written about it that names like Maikop and Koban are familiar even to English and American readers. But all attempts to present and interpret Caucasian prehistory have been handicapped both by the inadequacy of the older excavations and their publication, and also by formidable linguistic difficulties. The former defect can only be compensated by more scientific digging. The latter may be said to have been removed by Dr Hančar's book. With a complete mastery of the Russian language, he has collected and summarized all the relevant literature down to 1936 with extraordinary thoroughness and lucidity. Every significant detail from the older reports has been duly repeated and illuminatingly discussed ; a large and well-chosen selection of the published objects has been reproduced, as well as in the original reports. The student of Caucasian prehistory need no longer go hunting for the rare and unintelligible volumes of *Otchets* and *Izvestiyas* since the relevant passages are all condensed into these 400 pages.

Furthermore Hančar summarizes at length the views of most authorities who have written on the chronology and interpretation of Caucasian monuments and relics. In all cases that I can check he has succeeded in presenting these divergent views with admirable fairness, happily emphasizing the crucial points in the arguments. In particular he outlines sympathetically but not dogmatically the interpretations of archaeological data current in the U.S.S.R. today. Nowhere can one obtain such a good idea of the applications of Marxism-Leninism to prehistory and of its fruits.

Half the book is devoted to the palaeolithic and mesolithic phases in Cis- and Trans- Caucasia and also in the Crimea. The main facts have been already made accessible in West European languages by vol. v of the Transactions of the Conference of the Association for the Study of the Quaternary Period in

Europe (ANTIQUITY, 1936, x, 242). Hančar's book is to be welcomed not only as a substitute for this volume, that is even harder to obtain than it is to cite, but as a supplement containing fresh facts and articles and giving fuller Marxist-Leninist interpretations. We read here for the first time of an attempt by Myrchink and V. I. Gromov to transfer the Mousterian so that it straddles the Rissian instead of the Würmian, of a mouflon-like sheep in the 'Tardenoisian' of Fatma-Koba in Crimea and the identification in 'Azilian' horizons of 'two kinds of tame dog or rather creatures, once belonging to the wolf or jackal species, in the first stages of domestication'. The principal sites and their relics are first described, then the interpretation of the phenomena by Russian archaeologists is set forth.

As is well-known, Soviet archaeologists have been rather dogmatically evolutionist and anti-migrationist. This dogmatism is now denounced as sabotage. De Mortillet's names for palaeolithic periods are employed in a purely chronological sense denoting stages in an evolutionary sequence, as when they were first devised. Even the Neandertaloids are not relegated to an aberrant branch of the human stem that turned up a blind alley and became extinct, but accepted as a phase in the evolution of *Homo sapiens*. (Of course something like this view is coming into fashion even in the West in light of the Palestine discoveries). The earliest inhabitants of Crimea-Cis-Caucasia in late Riss-Würm times (rejecting the Myrchink-Gromov scheme) appear already specialized for hunting big mammals like mammoth and *Bos primigenius*, and equipped with flint tools adjusted above all for killing and dressing such. (Efimenko thinks that 'points' and 'D scrapers' are respectively men's and women's knives and thus imply a sexual division of labour). Living in small isolated communities and *ipso facto* condemned to endogamy they suffered cultural stagnation and physical degeneration. But with the onset of glacial conditions, represented by the first appearance of reindeer, Arctic fox, etc., in the Aurignacian of Syuren, men were obliged to establish permanent winter quarters and make provision for the bad seasons by intensifying the exploitation of their environment. Males become highly trained hunters devoted almost continually to the chase. The women, left in the camp, come thereby to occupy 'the productive centre of the primitive community'. (Efimenko would find in this circumstance the economic basis of the conceptions underlying the female statuettes which by the way are conspicuously absent from the Upper Palaeolithic of the Caucasus and Crimea). More permanent settlement increases opportunity for contact between groups permitting of exogamy and an interchange of ideas. With the return of temperate conditions hunting loses its exclusive role in the economy as berries, nuts, grubs and fishes become available. The dog was tamed just when wild boar and venison became prominent

in Crimean menus ; dogs would be particularly helpful in catching such game, but were themselves sometimes eaten. In more familiar language this means that the ' Mousterian ' cultures of Kiik Koba, Chokurcha and Ilskaya are anterior to the maximum of the Würm glaciation ; that coincides with the appearance of an Early Aurignacian in Syuren I, succeeded by a classical Middle Aurignacian. Then comes the ' Azilian ' ; there is no counterpart of the Late Aurignacian and Magdalenian. The Azilian according to Bonch-Osmolovski evolved directly into a Tardenoisian while the Upper Azilian itself was closely related to the Swiderian. Hančar wisely offers no explanation for these divergences from more familiar sequences.

Continuity between the Old Stone Age and the New cannot yet be established in the Caucasus. In post-palaeolithic times Hančar proposes the following sequence :—

Neolithic ..	Nalchik Stage		
Copper .. Age	Kuban Stage	Maikop	Phase
		Novosvodobnaya	
		Vozdvizhenskaya	
	Kuban-Terek Stage :	Phase 1	
		2	
		3	

The first stage has not hitherto been recognized by Western European prehistorians. It is represented primarily by the low mound at Nalchik that covered 130 contracted skeletons, all stained with ochre. Grave goods comprised the teeth of wild animals, boars' tusks, a female statuette in stone, stone bracelets, one copper ring and a carnelian bead. An adjacent settlement yielded ' coarse round-bottomed pots, rubbers ' (? for grain), flint arrows-heads but no bones of domestic animals. Soviet archaeologists see in Nalchik remains of a gentile society not yet engaged in stockbreeding and probably pure food-gatherers. The analogy to Mariupol on the Sea of Azov is patent, but in my opinion it remains to be proven that Nalchik is not the cemetery of poorer contemporaries of the rich men of Maikop and Novosvodobnaya'. (Novosvodobnaya is the correct designation of the kurgans usually called Tsarevskaya—which should be Tsarskaya anyway).

Maikop, the richest of all the burials, is put at the head of the Copper Age series for the reasons advanced by Yessen in his (Russian) ' History of ancient Metallurgy in the Caucasus '. The abrupt rise of such wealth and its technological and economic preconditions is caused by ' trade with the economic world of Hither Asia and its influence on productive processes '. Maikop is particularly rich in imported materials, including lapis lazuli from Iran, meerschaum from

Anatolia and turquoise. But these rich graves should not, according to Soviet archaeologists, be termed royal ; they may be attributed to tribal elders or perhaps priests. (A new point about the Maikop silver vases is that the animals depicted thereon include *Bos primigenius* and *Bos balticus*, a domestic pig, a goat and a tame panther ; a feature for comparison with British barrows is a ring-wall round the grave under the Maikop barrow and under Svodobnaya II, while circular fosses are common in south Russian barrows).

With the Kuban-Terek stage the area served by the systematic distribution of metal expands while foreign imports cease. Local metallurgists are beginning to produce for a local market while the diffusion of Kuban-Terek types—such as hammer-pins— across the Volga steppes points to the opening up of the South Ural ores. The number of bronzes deposited in the tombs is now greatly restricted, perhaps because private property is now assuming the form of capital—*i.e.*, flocks and herds. As time goes on the number of animal bones in the tombs increases, men have more and richer grave-goods than women, female figurines cease to figure in the burial inventory. Marxism-Leninism interprets these phenomena as reflexions of the change over from a matriarchal to a patriarchal organization of gentile society.

Hančar discusses in great detail the problems of the relation of the Copper Age Caucasian cultures to those of northern and central Europe and of their absolute and relative age. He summarizes the arguments for all the proposed chronologies from that of Smirnov, putting the whole series in the 8th century to that of A. V. Schmidt according to whom the Kuban phase began about 3000 B.C. He himself on the strength of analogies with Hissar III in Iran favours rather the end of the third millennium. He rejects the explanation of the Kuban culture by a folk-migration ' *i.e.*, groups of colonists seeking new land who had transplanted to the Caucasus their mode of life, economic and social organization and means of production '. The Myres-Peake-Childe hypothesis is equally rejected as is the very original thesis of Krichevskiy that Indo-Germanism is merely a stage in ' universal and regular social evolution ', corresponding to the transition from matriarchy to patriarchy. It must be insisted that our knowledge of the South Russian Copper Age is equivalent to what we should know of the British Bronze Age if we had only the bronzes and ornaments from our barrows without any pottery save say incense cups. It is unlucky that Dr Hančar was apparently able to visit personally only the museums of Moscow and Leningrad. In only seven cases has he been able to secure original photographs ; for the rest he has had to copy often inferior reproductions from Russian journals. A further misfortune was that the ' Royal Tombs ' of Alaca in Anatolia which contain all the types of hammer-pin characteristic of the Kuban-Terek stage were discovered only after the book was printed ; they affect not only the

absolute chronology but the whole question of the economic development within this phase. Accordingly Hančar has not been able to solve finally the basic problems of Caucasian prehistory. He has collected and arranged scientifically the material essential for their solution. V. GORDON CHILDE.

LES DECOUVERTES DE RAS SHAMRA ET L'ANCIEN TESTAMENT. *By* RENÉ DUSSAUD. *Paris : Paul Geuthner*, 1937. *pp.* 129. 30 *francs.*

M. Dussaud has earned the gratitude of all students of the ancient Near East by his compact and beautifully printed sketch of the discoveries made since 1929 at Râs esh-Shamrah, ancient Ugarit, on the coast of northern Syria. The contents of the book were given as lectures at Oxford University, and in their present form, enriched by copious notes and additions, they well illustrate the level of knowledge in September 1936. The numerous pen-and-ink drawings aid the reader to visualize the archaeological and epigraphical material, though some have been so reduced as to efface outlines.

The author is equipped as few scholars are to give a synthesis of the discoveries of M. Schaeffer at Ugarit. In the first place, he has been the guiding genius behind the undertaking since its beginning, and he has a first-hand knowledge of most of the excavated material. In the second place, he controls both the comparative archaeological and the documentary side ; a long list of books and papers on ancient Phoenicia, Syria, and Palestine since 1903 attest his continued research in the field. He also possesses the instinct for synthesis to a rare degree.

M. Dussaud would be the last to insist that this sketch is in any sense definitive. He has himself set an admirable example of receptivity to new conclusions, even when they upset his own most cherished hypotheses ; we need only mention his change of view about the origin of the Phoenician alphabet and about the name of Râs esh-Shamrah in antiquity. Our criticisms are intended to serve as a modest supplement to his book, and in no way as an attempt to undermine it.

The chronology of the site, after the first seven campaigns of Schaeffer, is treated on pp. 9–33 ; cf. especially the tables on pp. 10 and 25. The date of the fall of the city, at the end of Stratum I, is almost certainly to be placed somewhere in the first half of the twelfth century B.C., presumably shortly before the defeat of the Sea Peoples by Ramesses III (*c.* 1188 B.C.), with which it is connected most reasonably by Schaeffer (*Illustrated London News*, 20 Feb. 1937, p. 294). Dussaud's suggestion that it may have been destroyed by Tiglathpileser I (present date *c.* 1109–1082 B.C.) is both archaeologically and historically improbable, especially since the Assyrian king never mentions the place in his extant inscriptions. Against the late date is the fact that no pottery

of characteristically Iron I type seems to have been found on the site—certainly none has been published and the reviewer has seen none in his visits to the site and to the museums where pottery from the site is stored. It is interesting to note that the execution of the stela from the last phase of Ugarit published by Schaeffer (*Ill. London News*, 20 Feb. 1937, p. 293), resembles that of the Tell Ḥalâf orthostats (in the reviewer's opinion from the 12th and 11th centuries) more closely than does that of any Syrian monument yet found. When combined with the negative evidence of Mallowan's excavations at Chagar Bazar, this observation should give the *coup de grâce* to the high chronology of Ḥalâf (see below).

The second phase of Stratum I extends back from the late 13th century to about the year 1365 B.C., when Ugarit was partly destroyed by fire (see the reviewer's treatment of Amarna Letter 151 in the last page of a forthcoming paper in *Jour. Egypt. Arch.*, vol. XXIII). This stratum is characterized by an abundance of Mycenaean pottery (L.H. III). The first phase of Stratum I covers the preceding century or a little more ; from its ruins were recovered the tablets belonging to the temple-library, which thus antedate the year 1365 B.C., as pointed out by the reviewer repeatedly (cf. *Jour. Pal. Or. Soc.*, 1932, p. 185 ; *Bull. Am. Sch. Or. Res.*, no. 63, p. 26). King Niqmedas (for the reading see *Bull. Am. Sch. Or. Res.*, no. 63, p. 24, and cf. Dussaud, p. 122), under whom most of the tablets seem to have been written, flourished about 1500, toward the end of Stratum II, in the débris of which a document from his reign was discovered. The latter stratum covers the middle and recent part of Middle Bronze, and extends from before 1900 to *c.* 1500 B.C. or a little later. Since no caliciform or ' goblet ' ware seems to have been discovered at the site, and since the following transitional phase (Tell ej-Judeideh VIII and Tell Tūqân, latest occupation) is also apparently missing, there would seem to have been no settlement at our site between *c.* 2400 and the twentieth century B.C. The caliciform series is very well represented at the neighbouring site of Tell Sūkâs, where Forrer made soundings in 1934, so there can be no question that Ugarit lay within the territory of its diffusion. A certain restricted occupation in the first half of the third millennium is attested by the finds of the seventh campaign (cf. *Syria*, XVII, 128, and note that Tell Beit Mirsim J belongs to a later phase of the same age). Otherwise there is a great lacuna covering the whole of the third millennium and probably the entire second half of the fourth, a lacuna filled in by the soundings of Forrer at the near-by sites of Qal'at er-Rûs and Tell Sūkâs, the pottery of which will be fully treated by Dr Ehrich in her forthcoming dissertation.

The chalcolithic and neolithic strata III–V must now be pushed far beyond the first date given (before 2000), and the date provisionally set by Dussaud for

the end of III (middle of the third millennium, p. 17), must now be raised to the middle of the fourth millennium. There is no room in this review for adequate demonstration, but the facts are now conclusive. Stratum III shows sufficient resemblance to the Obeidian and Samarran cultures of Mesopotamia to justify a provisional date in the first half of the fourth millennium, while IV is even more like the Halafian of northern Mesopotamia, which must be assigned entirely to the fifth millennium. The unpainted ware of V belongs to a still higher antiquity (before 4500 at the latest), corresponding to stratum XIV at Tell ej-Judeideh (*Am. Jour. Arch.*, 1937, p. 11).

Having devoted so much space to the important subject of chronology, we shall limit our further observations to the following remarks. On pp. 47–50 there is a most judicious account of the decipherment, which strikes a happy mean between the extreme positions of the first decipherer, the late Prof. Hans Bauer, and M. Virolleaud, who like Rawlinson has claimed more of the honour of the initial success than he justly deserves. We hasten to add that both Rawlinson and Virolleaud unconsciously distorted the facts by a familiar psychological process ; history, however, will inevitably support their rivals, just as it upholds Newton and Young against Leibnitz and Fresnel. The following account of the phonology and grammar is not so happy ; the author should have followed Friedrich, Ginsberg, and Montgomery-Harris—not to mention the reviewer. The account of Ugaritic mythological literature is very good ; Dussaud is at his best in this field, where he follows the excellent beginning which he made in his *Notes de mythologie syrienne* (1903). With the author's treatment of the original home of the Phoenicians in the light of the tablets from Ugarit (pp. 55–63) and the supposed parallels between Ugaritic and Israelite saga (pp. 96–109) the reviewer fails completely to agree ; for details reference may provisionally be made to *Bull. Am. Sch. Or. Res.*, nos. 55, p. 26 f., 63, pp. 27–32 ; *Jour. Pal. Or. Soc.*, XIV, 133–140).

Finally, we wish to express our hearty approval of M. Dussaud's words (p. 8 ; cf. pp. 116 f.) : ' The results which the school of Wellhausen thought it had reached, must be entirely reconsidered in the light of the new documentation. The school has under-estimated the value of the biblical texts, and even the reaction of Gunkel was insufficient '. W. F. ALBRIGHT.

DER OBELISK UND SEINE BASIS AUF DEM HIPPODROM ZU KONSTANTINOPEL. *By* GERDA BRUNS. *Archäologische Institut des deutschen Reiches, Abteilung Istanbul.* Istanbul, 1936. *pp.* 91, 89 *plates.* Price not stated.

Tourists to Constantinople during the last seven hundred years have seen the great Obelisk of Theodosius in the Atmeidan and marvelled at it. From

the time of the Russian pilgrims in the 13th and 14th centuries there has been continuous comment on it.

But, despite the fact that on its basis are inscriptions in Latin and Greek describing the occasion and manner of its erection, it presents more problems than any other single monument in Istanbul. For its base consists of two parts, the lower a marble block depicting in relief races in the Hippodrome and the column itself, together with the process of its uplifting and the two inscriptions, the upper one a totally distinct block with reliefs on all four sides. A cursory glance leaves no doubt that the style and date of these two series of carvings differ profoundly. Yet both must have been brought together at the moment when the obelisk was hoisted to the vertical, and it is quite certain that the lower relief must have been cut at the time when the obelisk was lying in the Hippodrome, for it is, as it were, a contemporary view of it.

Yet we know neither the exact date of the erection, nor the date of either the upper or the lower reliefs. Nor do we know the meaning of the ceremonial represented on the upper relief, nor the names of the emperors and officials there depicted.

Walters and Dalton thought that the upper reliefs were of the time of Constantine, derived from some earlier monument. Rodenwaldt and others attribute them to the time of Theodosius. Delbrück, detecting three Augusti and two Princes on the relief, decides on the year 369.

Our only clue is to be found in the Greek and Latin inscriptions. These follow the usual tendency of Byzantine dedications and are about as explicit of the events in question as the ' light ' of a cross-word puzzle :

' Of lords serene a stubborn subject once, bidden to bear the palm to tyrants also that have met their doom—all yields to Theodosius and his undying issue—so conquered I in thrice ten days and tamed, was under Proclus' judgeship raised to the skies above '.

So runs the Latin inscription. Proclus is our only hint. But in both the Greek and the Latin inscription the name of Proclus is inscribed over an erasure, so even our only hint is wrapped in mystery.

Miss Bruns sets herself the task of tackling the problem. Events, she shows, must be associated with the date of Proclus. She supposes that the actual obelisk reached the Hippodrome in 390, brought from Egypt originally by Julian. Then the foundations of the podium and the relief-block showing, in anticipation, how the engineering feat was done and the inscription mentioning Proclus, were put into position. But in 392 occurred the disgrace and execution of Proclus and the whole work was suspended. The name of the executed man was duly erased from the inscription. Then in 396 Arcadius recognized the innocence of Proclus and had his name recut on the erased surface.

An artist was then commissioned to carve the upper block with the Imperial scenes, and the work was completed. Theodosius I, Valentinian II, and Arcadius are the Augusti represented, and Honorius and Eucherius the princes.

I must confess to a certain scepticism. All this is mere conjecture, and fails to explain how two reliefs so fundamentally different in style could have been made by Constantinopolitan artists in a period of six years. There is clearly a much wider difference of date. We have absolutely no criteria of dates for sculpture in the 4th century. The lower relief must certainly date to the period 390–396 on internal evidence, and there are other similar reliefs in the Istanbul museum. But the upper relief seems to me much earlier. It is closer to the style of the Column of Theodosius, built in 386, of which fragments were found in 1927. It may be even earlier. Almost certainly it was originally carved for some other monument. The four inserted granite blocks at the corners suggest that it required these additions to adapt it to this monument.

But Miss Bruns' monograph is the only complete survey of the whole problem and deserves the highest praise for its admirable photographs and its orderly marshalling of facts. Her accumulation of illustrations from Turkish and European sources adds to the value of her work. S. CASSON.

THE ROMANO-BRITISH SETTLEMENT AT THATCHAM-NEWTON, BERKSHIRE, *by* W. E. HARRIS. (Reprinted from the Newbury District Field Club Transactions, 1937).

We have selected this article for special mention (out of many others received, of no lesser archaeological merit) because it sets an example—both of original record and of succinct publication—that should be imitated elsewhere. Before 1921, when Mr Harris went to live there and began his investigations, there was no real justification for identifying SPINAE with Thatcham-Newton—indeed there was virtually no evidence at all of Roman occupation. Two collapsed shafts, suspected to be wells, had been reported by the side of the continuation, towards Shaw, of the Roman road which I had discovered before the war ; but the age was unknown. Since 1921 Mr Harris has observed, and recorded with exemplary care, the sites of several others, together with other remains of permanent dwellings. Thanks to him they are now safely recorded upon the published 25-inch Ordnance Maps. But the individual discoveries have been noted from time to time in not very accessible articles, and it is a real boon to the future historian of the Newbury district to have here a resumé of the evidence from the hand of the person best acquainted with it. In the past (as readers of Haverfield's invaluable V.C.H. articles know) the compiler has had to piece together an ill-fitting structure from fragments of every kind, some of doubtful authenticity, some whose site was vaguely recorded or whose

associations were suspect. All this has been saved here by this contemporary synthesis of the evidence.

As regards the identification, we think that, as Mr Harris (quoting Beeke, 1806) suggests, 'the name SPINAE, meaning Thorns, might have originally applied to an area of thorny country of sufficient size to include both Thatcham and Speen, the name only surviving in the western part'. It may thus have been the name for the gravel commons over which the Roman road passed for several miles; the natural vegetation of such soil including (besides birch) hawthorn and furze, both thorny shrubs. The name would naturally survive only where, as at Speen and Speenhamlands (formerly Spinhamlands), an ancient settlement survived. (Thatcham itself lies just off the Roman road, a little beyond Thatcham-Newton eastwards). Other instances of such short-distance name-shifts are known to occur (Mæthelgaresburh, now Stow on the Wold, survives as the name of the village of Maugersbury; the Roman village of Letocetum was succeeded by the medieval town now called Lichfield, with intermediate names of Luit Coyt and Lyecidfelth; Sliaswic, formerly applied to the Viking town now called Haithabu, has survived as the name of the adjacent modern town of Schleswig, see OFFA, 1937, p. 111).

There are a few trivial errors in those sections where the writer is not on his own ground, particularly in the identifications of the Nennian 'cairs' (see ANTIQUITY, XII, 1938, 44–55 which, of course, appeared after his article was printed). The form 'Gloui', hitherto given for Gloucester, is not the reading of Harleian MS. 3859, the best source, which is quite certainly Gloiu, and is printed as such on the Ordnance Survey Map of Britain in the Dark Ages (South Sheet). But these are trifles that in no way detract from the value of the whole. Both the article and the research behind it are excellent instances of the valuable work that can be accomplished by a single individual, content to record *facts* while they are available and before it is too late to do so. O.G.S.C.

COMMUNICATION HAS BEEN ESTABLISHED. *By* ASTLEY J. H. GOODWIN. *Methuen*, 1937. *pp.* 268, 2 *plates and* 15 *text-figs.* 10*s* 6*d.*

This is a popular account of transport by land and sea in all ages and climes. The plan is well conceived and in general is carried out well, but the very vastness of the subject makes occasional error inevitable. The following criticism is given in the hope that it may prove useful when the work is revised preparatory to a second edition, which its outstanding merit certainly deserves. The chapters on prehistoric migrations and on ancient navigation are the least satisfactory and much emendation is necessary.

In respect to generalizations, the old fallacy that the Phoenicians held for

long a carrying trade down the Red Sea and on to the Persian Gulf and India is repeated (p. 133) in spite of their lack of naval bases in Asiatic waters. Seafaring in ships of their own was limited to the Mediterranean ; only on occasions when special expeditions were required by the rulers of Egypt and by King Solomon did they have opportunity to penetrate into the Indian Ocean in ships under their own command. Similarly, far too much credit is given to the Semitic Arabs for early seafaring exploits and too little to the Chinese, while none is given to the Persians and to the Indonesian sailors of the first millennium of our era. The Arabs, properly so-called, were not seamen by nature ; they learned navigation from the Persians, as proved by the many Persian terms incorporated in their nautical vocabulary and by the use of the Persian year instead of the Muhammadan one in their ' Nautical Instructions ' until the 16th century.

It is a grave injustice to the Chinese to say (p. 163) that they have never been a great seafaring folk. How is this possible when we have Arab authority for the statement that China regularly despatched fleets of junks to the Euphrates as early as the 5th century ? Of later trading to the Persian Gulf and to India there is overwhelming evidence. In 851 the merchant Sulayman wrote that the greatest part of the Chinese fleet loaded their return cargoes at Siraf on the Persian side of the Gulf, and in the 14th century we find Ibn Batuta taking passage to China in a Chinese junk at Calicut—with no mention of Arab vessels engaged in this traffic. Nor must the invasion and conquest of Ceylon in the beginning of the 15th century by a Chinese war-fleet be forgotten. An omission that should also be remedied concerns the shipping and migration movements of the Indonesians. The sculptured panels of Boro Budur, 8th or 9th century, show great two-masted ships, fitted with outriggers. In ships of this type must have sailed the Sumatran and Javanese ' Pilgrim Fathers ' who colonized the great isle of Madagascar and spread the use of the outrigger along the east coast of Africa.

A few of the actual errors may be mentioned. Fig. xv purports to be an ' Outrigger from the Solomon Islands ' ; it is a typical outrigger canoe of Kaniet, in the Bismarck Archipelago. Except at the north and south ends of the Solomons, the island canoes are characteristically *unprovided* with outriggers. On p. 99 the remarkable statement is made that coracles covered with ox-skins are still to be seen in England, and while the journey of three Irish pilgrims in a coracle from Ireland to Cornwall is mentioned, the far more important voyages of Saints Columba and Brendan are ignored. The figures of methods of ' sewing ' planks together (p. 114) are misleading also, for the usual method is to pass the cord several times through vertically opposed holes in adjoining planks and then to pass obliquely to the next pair. JAMES HORNELL.

A CEMETERY AT SHUDY CAMPS, CAMBRIDGESHIRE. Compiled and illustrated *by* T. C. LETHBRIDGE. Cambridge Antiquarian Society: quarto publications, 1936. *pp.* 38 *with illustrations and plans.* 5*s.*

This is the second of the 'late' Saxon cemeteries excavated by Mr Lethbridge, and, as in the case of the first (Burwell), his published report is a most valuable paper, very cleverly and aptly illustrated by the author. Moreover, as those who know Mr Lethbridge's work will expect, this account is generously peppered with the acute and lively observations that flow so freely from his candid pen. The finds themselves were not very rich; but what there was, was interesting, and the wooden bed (Grave 29) deserves to become well-known; for Mr Lethbridge's reconstruction of an imposing piece of furniture out of an enigmatic iron-fitting is both ingenious and plausible. A gold-mounted glass bead is another rarity, and there were also five important pottery vessels that are a useful contribution to the magnificent collection of Saxon ceramics at Cambridge. The Shudy Camps folk were, however, a poor lot, and I confess that they seem to me to have been backward and superstitious barbarians of the most depressing kind. Why Mr Lethbridge should maintain that these squalid creatures were Christians, and how he dare imagine that Kentish archaeology is affected by their paltry possessions, are problems that this publication does not satisfactorily solve. T. D. KENDRICK.

COINAGE AND CURRENCY IN ROMAN BRITAIN. *By* C. H. V. SUTHERLAND. *Oxford University Press*, 1937. *pp.* XII, 184, *and* 14 *plates.* 10*s* 6*d.*

The short note on the paper cover of this book reminds us that it is just a hundred years since J. Y. Akerman published his *Coins of the Romans relating to Britain*, and calls attention to the difference that that interval has made to these studies. There could hardly be a better introduction for the reader; for attention is at once drawn to what constitutes the main interest of Mr Sutherland's work. He has not just passed once again in review the stock of Roman types that bear on our island history. A book on these lines could not hope to make any very serious advance. He has attempted to follow up new lines of research that have been steadily opening up before the eyes of scholars during the last generaton.

A century ago the study of numismatics was in what might be termed a 'pure' state. Coins were very largely studied by and for themselves, without very much reference to other forms of historical evidence. Today, whilst pure numismatics has gained greatly in precision, it is in the application of numismatics to history that the most critical advance has been registered. Mr

Sutherland's book is an excellent example of the modern applied method, by which the coin is studied less as a coin, simply and solely, than as a piece of historical evidence, related to the sum total of contemporary evidences. His real aim is to give us an account of what the Roman coinage in its bearing on Britain means for the general history of the island. It might perhaps be pleaded that this aim should be more definitely expressed in the title. Subject to this verbal reserve, we can wholeheartedly applaud the book.

The material that we have to handle is Roman coinage circulating in Britain, as revealed in hoards and site-finds. Of this coinage, so far as it is regular, only a very small proportion can actually have been struck in the island. It is not till we come to the 'barbarous' imitations that we can be sure that we are dealing with local work, and, as a rule, we have no great reason to be proud of it then. But the material has an interest and value quite independent of any artistic merit. It preserves for us, in a form hard but not impossible to understand, some record of a stirring history that included such events as the coming of the Romans, the revolts of the Britons, the financial crisis of the 3rd century, the Gallic Empire, Carausius, the great Pictish revolt and the withdrawal of the legions.

It is remarkable how clearly Mr Sutherland enables us at the outset to see the gradual entry of Roman coinage into the island—denarius of the Republic, As of the early Empire, finally silver and even gold in plenty. Later, we see the effects on Britain of the economic landslide of the 3rd century, and the curious reflection of the history of the Gallic Empire in British hoards. The remarkable coinage of that remarkable character, Carausius, receives an attentive and successful study. Finally, we see how the British finds mark the departure of the legions and the long twilight of Romano-British decay.

Two points deserve closer attention—one of rather special, the other of more general interest. In dealing with the second half of the 3rd century A.D. Mr Sutherland finds himself in something of a difficulty. He cannot escape the general evidence that Britain shared the destinies of the Gallic Empire, but he very properly calls attention to evidence from coins that raises doubts of this—evidence, for example, of the arrival of coins of Claudius II and Quintillus in Britain very soon after issue. It seems to us that, while Mr Sutherland reaches a partial solution, the problem really only yields when we admit that many of these hoards were buried much later than is at first apparent and represent correspondingly later conditions of currency.

This brings us to our second point—the much debated, much abused theory of 'coin-drift'. Here Mr Sutherland seems to us to strike a happy mean. He will not postulate that coins normally take a definite period—be it five years or fifty—to travel from the capital to the provinces. He admits the

probability of very rapid transit in some cases, while arguing with strong conviction for a considerable time-lag in others. We must use a much more modest formula than many that have been suggested. ' Coins travel from central mint to outlying province at a rate that may vary from a few months to a long term of years, the variation depending on circumstances, not indeed beyond control, but requiring to be checked up in each particular case '.

It is not certain that everyone will find Mr Sutherland's book easy reading. It involves too much research in difficult fields for that. But it *is* safe to promise that it will not disappoint anyone who is willing to devote to it the modicum of attention that it demands. In particular, it speaks, beyond the narrow circle of numismatists, to the student of Antiquity. The printing and plates are worthy of a notable contribution to our modern studies of ancient Britain. The price is really moderate.

HAROLD MATTINGLY.

THE MESOLITHIC SETTLEMENT OF NORTHERN EUROPE : a study of the Food-Gathering Peoples of Northern Europe during the early Post-Glacial Period. *By* J. G. D. CLARK. *Cambridge University Press*, 1936. *pp.* XVI, 284, 28 *plates*, 74 *text figures*, *map*. 25*s*.

Mesolithic studies have long been gaining ground. They were given considerable impetus by the Maglemose excavations and, especially, by the discovery of the Tardenoisian culture. Attention has been particularly attracted to the collections of Mesolithic flint-implements, which we have now learnt to distinguish more and more sharply from Neolithic finds. As a result, a rather unwieldy body of literature has accumulated ; in fact, the extensive writings on the Tardenoisian culture alone fill a small library. Our chief need hitherto has been a broad general survey, and this has now been provided for North Europe by Dr. J. G. D. Clark, in a book which is a model of its kind. He is pre-eminently fitted for the task ; for, in Mesolithic research, besides knowledge of prehistory, certain innate qualities are also essential if one is not to be lost among these tiny flint-implements with all their various forms. Even professed prehistorians generally prove unequal to these demands: so few students, old and young alike, possess the powers of observation needed for the study of these little objects, which are too often treated as unimportant, and even the majority of specialists regard it as an impenetrably nebulous subject. But Dr. Clark possesses the necessary gifts to the fullest degree ; he is one of the few European scholars to whom we owe decisive knowledge of the technique of Mesolithic flint-implements.

The book begins with a very clear review of the geological, botanical, and zoological bases of the inquiry, with most valuable results. Dr Clark divides the whole Mesolithic age into three main periods, the pre-Boreal, the Boreal,

and the Early Atlantic. To the first he assigns the Ahrensburg and Lyngby tanged-point cultures with their connexions. The oldest microliths appear at Ahrensburg, if we omit the evidence of the Hamburg culture. The author has established an important fact, that micro-burins are not in evidence here, and that therefore the notch method was not yet employed in making the microliths. Fortunately he already had at his disposal the earliest finds from Meiendorf, although their original assignation by pollen-analysis had been at fault. With much penetration he regards the Hamburg civilization as ancestral to the Ahrensburg–Lavenstedt culture. On the other hand, he considers the Swiderian as originating in an Aurignacian or Předmost facies, while 'the flat inverse retouch, typical of so many of the tanged points, is found in Solutrean levels in Jerzmanowska-Höhle '. I venture to assume that there will one day be found in the Swiderian region a group similar to the Hamburg. If we bear in mind that Alfred Rust's finds round Hamburg date only from 1931, we ought to expect important finds also elsewhere. Dr Clark rightly assigns the Norwegian groups Fosna and Komsa to the tanged-point cultures. He agrees with my original suggestion that the tanged-point groups of northern Europe are derived from a northern palaeolithic such as we have in the Hamburg culture.

To the first period also he assigns the greater part of the Lyngby culture ; at the time when he was writing his book, this was the earliest known axe-culture. Here he has an acute discussion of my theory that the axe originated in northern Europe, trying to do full justice both to this and to opposing views. He agrees with me that the Lyngby axe is the oldest hafted axe in Europe, but will not claim definitely that it is the oldest in the world, as I believe. Against me he considers it quite possible that areas will one day be found ' in which a hand-axe civilization of Lower Palaeolithic type evolved directly into an axe-culture of Campignian type '. He continues : ' The area of axeless Upper Palaeolithic civilization is, however, so extensive around Northern Europe that a possible direct evolution in some outlying region of the earth can hardly be invoked to account for the flint axes of period II of the northern Mesolithic '. He thus recognizes that the Lyngby axe is the prototype of the axe.

I should like here to take the opportunity of referring again to the great difficulties in the way of interpreting the hand-axe as an axe in the customary sense, *i.e.*, as a hafted instrument. In the first place, its shape, with its often bulbous butt-end, makes it quite unsuitable for the addition of a haft ; and besides this, these tools show a strong tendency towards a lanceolate pointed type, which is also difficult to reconcile with the idea of an axe-blade, and much rather suggests a dagger. But why assume a haft, when there is so much evidence against its existence ? The discoidal hand-axe also, at the opposite extreme of development, is also against any connexion with the hafted axe. Here we have a

favourite type of fighting weapon, carried in the bare hand ; its shape is on the average remarkably divergent from that of an axe-blade ; and to interpret it as a hafted axe was a most unfortunate and perilous theory, as the foregoing remarks show, which obviously arose from the natural inclination of earlier archaeologists to credit the oldest men with a knowledge of the axe. The great difficulty in the way of an immediate acceptance of my theory is the fact that an implement of which we can scarcely imagine the most primitive civilization to have been ignorant, should yet not have existed in what is by far the longest period of human activity upon earth. But we may remember that evidence for such axeless civilizations has in fact recently been forthcoming, as I have shown in *Festschrift des Museums für Volkskunde in Hamburg*, 1928.

We owe the author special thanks for his extraordinarily careful work on the civilizations of the Maglemose type in period II. These extend beyond the North Sea to the west as far as Britain. We have here in exemplary form what was particularly needed, namely, a comprehensive examination of the finds from Britain to the Baltic countries. From a methodical arrangement of the many variants of ' harpoons ', Dr Clark comes to the remarkable deduction that certain types such as the Kunda-type, hitherto universally regarded as late, belong in fact to the very oldest. On the other hand, he rightly treats as later local variants the original Mullerupian ' harpoons ' which are practically confined to Zealand. The bone-points with flint-insets may likewise belong to the end of the Maglemosian period, for they too appear to be northern local types. From their absence in Britain, Dr Clark infers that this was caused by the marine transgression between Scandinavia and England, for which a possible date could be approximately ascertained by comparing the types still found in Britain with the later ones that it lacks. From the occurrence of perforated stone maces and the *bohrornament* technique, the use of a bow-drill can be inferred. Paddle-rudders, fishing-nets, and fish-hooks seem also to have appeared newly at this period.

It was to be expected that something new would emerge when the vast mass of Ertebölle flint implements was subjected to a fresh examination by so outstanding an authority. Of special importance is Dr Clark's establishment of the fact that large numbers of burins occur, not only at Bloksbjerg, but also, though previously unobserved on the classic stations of the Ertebölle culture. The Walzenbeil or round-butted stone axe forms an integral part of this culture. The author holds that the sometimes oddly shaped wooden implements found by Thomsen at Brabrand Sö are all throwing-sticks of different forms. While at the outset of development the *Querbeil* (or adze), is most prevalent, in the Ertebölle culture it is very rare. The well-known perforated antler axe, which is found here for the first time, came in only at the *Litorina* maximum. Most

of the Ertebölle types go back to an earlier civilization : new features are the bone combs and bracelets, and the pottery. Dr Clark also regards the finds from Oldesloe and Gudenaa as transitional between Maglemose and Ertebölle cultures. The Linhamn, Lihult, and Nöstvet cultures have their origins in period III, but are mainly later. In Britain, the counterpart of the Ertebölle culture is that of Lower Halstow, in north Kent ; unfortunately, only stone implements have survived here. A special type of core axe is known as the ' Thames pick '. Dr Clark explains the considerable divergences between Lower Halstow and Ertebölle as due to the marine transgression, which had meanwhile long since taken place, with the result that the development of stone implements took widely different courses in Denmark and in Britain.

Maglemose art receives a special chapter, and a welcome analysis is given of geometric motives. In the Magdalenian period the naturalistic style was already degenerating towards conventionalization, and in the Maglemose art this process is completed. Dr Clark is not inclined to accept affinities with the conventionalized paintings of Spain. The Arctic rock-engravings probably go back to period II, although most belong to period III or even later. It is impossible, he concludes, for Maglemose art to have been transitional between the Upper Palaeolithic and Arctic groups : it became extinct in the Atlantic period, and we have no evidence that the Arctic group of rock-engravings and sculptures was already in existence before then.

Another chapter deals with the axeless microlithic culture, *i.e.*, those groups of finds which we know as Tardenoisian. In an interesting passage, Dr Clark treats of the existence of Mesolithic civilizations with and without axes, side by side, a phenomenon which much struck me also at the outset of my Mesolithic researches. I have enunciated the theory that the axe-using civilization represented a stage in advance of the axeless, while the Tardenoisian culture was so to speak a palaeolithic civilization-group which survived far into the post-glacial epoch. Originally (in 1927) I treated the existence side by side of a microlithic element of pure Tardenoisian character and of the elements which serve to distinguish the Duvensee and Maglemose groups etc. from the Tardenoisian, as evidence for a mingling of different cultures. At that time the Tardenoisian culture, with its well-developed microlithic element, was sharply contrasted with the axe-civilizations ; this appeared to suggest a genetic connexion between the two groups, and so it was easy to reach the conclusion that the microlithic which also appears in the Maglemose culture-area was a foreign element due to Tardenoisian influence. It was only later that I established the existence of an earlier microlithic in the Ahrensburg civilization, which need not necessarily have been borrowed from a foreign group : and since then I have inclined to the view that microlithic may have developed quite as much locally

in the North as in other parts of the old world. My conjecture that the North African microlithic groups are not so old as was originally believed, has meanwhile been confirmed by the researches of Vauffrey and Mencke. Therefore it also becomes superfluous to assume that microlithic culture was introduced to Europe by way of north Spain, as Dr Clark still attempts to do. If microlithic is considered as an element common to the Mesolithic civilizations, then the absence of the axe in the Tardenoisian culture is left as the main point of difference between the two groups, Tardenoisian and Maglemose. There are still many other points of divergence, on which Dr Clark also comments ; they appear chiefly to lie in the antler and bone implements, which unfortunately do not occur in most of the Tardenoisian finds. Dr Clark views the appearance of the axe simply as conditioned by the change in vegetation. The axe served principally for forestry and consequently appears with the replacement of tundra by forest. Certainly the axe-less Tardenoisian peoples generally lived on sandy soil or in mountains, but the dunes in which their remains are found do not by any means always cover a wide area, and were probably also surrounded by forests, to say nothing of the mountainous country. So that if the axe became a necessary implement to the Maglemose peoples because they lived in forests, the same must also have applied to Tardenoisian man in practically the same way. I too believe that the axe served chiefly for forestry, but should like to feel that it was a chance invention of some man of genius who by this means first made possible the production of large wooden implements, especially for purposes of navigation. I believe therefore, to put it plainly, that the Maglemose civilization was in advance of the other in more than one respect, and that in consequence its peoples found living possible in regions avoided by Tardenoisian man. Tenacious clinging to ancestral ways of life has always been in evidence in very diverse stages of civilization, and still exists today ; very probably racial distinctions play their part here, as Dr Clark after all emphasizes, without any need to bring over a foreign people from Africa or Asia Minor. In Europe also racial contrasts, as they seem to be mirrored here, might have been produced by a process of selection over thousands of years.

It is a pity that Dr Clark ended his work at a moment when the later observations of Alfred Rust at Meiendorf and Stellmoor were not yet accessible. But that hardly lessens the intrinsic value of the book. For the worker on the 'mesolithic front ' it comprises such an amazing number of good and new observations and penetrating conclusions, besides so many masterly analyses of form-groups, types, combinations, distribution etc.—hitherto little investigated—that it cannot be bettered. The book is one of the most important and delightful publications on prehistory that has appeared during recent years. G. SCHWANTES*.

* Translated from the German by R. G. Austin.

SIGILLATA WARES IN THE NEAR EAST : a list of potters' stamps. *By* J. H. ILIFFE. *Oxford University Press*, 1936. Reprinted from the *Quarterly of the Department of Antiquities in Palestine*, vol. VI, *pp.* 4–53. 1*s.*

Although it has long been recognized that the origin of Arretine ware was to be sought in the Aegean region, the only investigation that has yet been made of a pottery-centre of Terra Sigillata was undertaken by Loescheke at Tschandarli, the port of Pergamon, in 1911. This excavation was too brief and summary to discover actual kilns, which doubtless exist on the site, judging by the extensive tip-heaps of sherds, fragments of moulds, wasters and ashes.

Mr J. H. Iliffe, the Keeper of the Palestine Museum, has rendered a great service to the study of Terra Sigillata found in the Aegean and Eastern Mediterranean areas by classifying the pottery in definite groups (characterized by variations in technique and glaze), by discarding such precise terms as Samian and Pergamene, and by compiling a valuable index of potters' stamps on Terra Sigillata found in the Near East, which forms an excellent basis for future workers in this field as well as a stimulus for arriving at more exact classification and chronology, and also towards the discovery of actual pottery-sites and kilns. As a consequence of Mr Iliffe's work this index has already received much amplification by Mr Howard Comfort (' Supplementary Sigillata Signatures in the Near East ', *Journal of the American Oriental Society*, LVIII, 30–60).

Some of the stamps in Mr Iliffe's list are obviously not names of potters, *e.g.*, the acclamations ΚΑΛΑ and ΚΑΙΣΥ (commonly occurring on tombstones, similarly to ET TU) and the words ΔΩΡΟΝ, ΚΕΡΔΟC, ΧΑΡΙC. The stamps he adduces as Gaulish are either Arretine or Puteolan, and indeed most of his Italian stamps prove to be Puteolan rather than Arretine. The importation of Italian Terra Sigillata to the Near East—a reversal of the original movement—was perhaps due to superior excellence of workmanship in the later period of Arretine ware as compared with Anatolian fabrics at this time, for, as Mr Iliffe remarks, ' the precision and sharpness of the Italian wares is never attained in the East '.

FELIX OSWALD.